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THE NEED OF FULL-TIME HEALTH OFFICERS *

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Public health has been demonstrated time and again to be a purchasable commodity. Its value is not generally appreciated, however, and the price is not cheap. Three requirements must be fulfilled before any improvement of sanitary conditions may be guaranteed to a state or a community. These cornerstones on which public health administration rests are:

1. Wise legislation.
2. Adequate appropriations.
3. Efficient health organization.

Behind the three must of course lie public sentiment to cooperate in the enforcement of the measures deemed advisable and make possible their success. In other words, this is the minimum price which any human collectivity, be it nation, state or community, must pay to conquer preventable diseases, and through better health gain increased prosperity.

As a matter of fact, public health organization in the United States has been a plant of slow growth and has been stimulated for the most part by epidemics. The many federal, state and municipal health laws placed on our statute books, having been enacted independently of each other and to meet some emergency of the time, lack uniformity, and not every section has been provided with a local health organization. Moreover, the funds provided to carry on public health work have not been generally sufficient for the purpose. For instance, the total amount appropriated for the work of the State Board of Health of Minnesota in 1915 represented but 0.0034 per cent. of the total revenues of the state based on the figures of 1912, and Minnesota is above the average in support of such work. In at least one state no funds were voted for this purpose.

The conditions in counties and townships all over the land are even worse, practically none of them having full-time health officials. In Kansas, for instance, there were no full-time health officials prior to 1915. The report of the Kansas Commission on Public Health emphasized how unsatisfactory are present conditions from the standpoint of efficiency. The total amount spent for salaries to health officers in the whole state did not reach $42,000, the highest salary paid being in Kansas City, $1,500 per annum, and the average salary being about $310. Naturally, all these officers were also engaged in private practice to gain a livelihood, and many of them held other offices, as coroners and as county or pauper physicians. In many cases it was admitted that politics controlled the appointments, and that it was not unusual to let the lowest bidder have the health office.

In Illinois also, with the exception of Chicago, and of the cities of La Salle, Oglesby, and Peru, which have joined forces, there are, so far as reported, no full-time local health officers. Furthermore, out of 614 cities, towns and villages within that commonwealth, which responded to requests for information, no specific appropriations for health purposes were reported by 425. Of the 189 remaining, 106 had paid health officers, some of whom received as low as $5 per annum.

From the above it is evident that there is opportunity for great improvement, and in my opinion this may best be brought about by the systematic development of local health organization and employment of full-time health officers who are properly equipped to undertake the special duties that should be required of them.

THE IMPORTANCE OF LOCAL HEALTH ORGANIZATION

Of late, special emphasis has been laid on the exercise of larger powers by the federal government in the public health domain. In consequence, the need of strengthening local health administration, especially in rural communities, has been in large measure overlooked, and this subject is only beginning to receive any attention commensurate with its importance.

In other words, while local health administration should be the strongest, in reality it is the weakest link in our chain of national defenses for disease prevention.

It is true that many large cities are well provided, and the reduction in morbidity and mortality rates for the country as a whole in the last twenty-five years is largely attributable to such metropolitan provisions. It must be remembered, however, that 52 per cent. of our total population is rural, that is, live in the country or in towns having less than 2,500 inhabitants. It is for this class that provision should be made.

The federal and state governments cannot be expected to act locally except in great emergencies, it being their function rather to exercise advisory and supervisory powers in respect to local matters. They should encourage the establishment of local health agencies, therefore, and cooperate with them after they are established, to the end that public health work shall be coordinated and conducted in large part automatically in so far as the individual citizen is concerned.

* Read before the Section on Preventive Medicine and Public Health at the Sixty-Sixth Annual Session of the American Medical Association, San Francisco, June, 1915.

DISSIPATION OF AUTHORITY TENDS TO RETARD DEVELOPMENT OF HEALTH ORGANIZATION

By lack of proper direction in the past, public sentiment has at times given rise to the creation of new and inexperienced bodies, and entrusted them with the performance of health functions independent of already constituted local health organizations. In consequence, there has been dissipation of authority and delay in properly coordinated health development. To take one conspicuous instance, we may cite the laws relating to tuberculosis. They show a tendency to create separate boards and commissions, and even to entrust semiofficial bodies with this distinctly public health problem. In Chicago, for example, "the control of this important communicable disease is not vested in the health department," although there is a close relationship between that department and the municipal tuberculosis board which does exercise this function.

In the interest of economy and efficiency, all purely public health activities of a community at least should devolve on the local health organization, and to scatter them will prevent or delay proper development.

By correlating local public health measures and requiring them to be performed under the direction of a responsible health authority, the community will benefit, and that official will have an abundance of work to keep him busy. If he is not so kept, or if the raising of his salary is a burden, then the size of the jurisdiction over which he has oversight is too small, and it should be enlarged by the joining together of two or more political units.

HEALTH JURISDICTIONS SHOULD BE SUFFICIENTLY LARGE TO SUPPORT FULL-TIME HEALTH OFFICERS

Since it is impracticable for many counties to maintain full-time health officers independent of the municipalities within their borders, it would seem especially advisable for these jurisdictions to pool their interests. What is needed are full-time health officers, and enough citizens should be grouped in each health unit to insure the full services of such a health official. Such services are surely as important to the county and municipality as are those of the sheriff, the recorder or the judge.

By such means will efficient local health administration become possible. Efficient local health organization is undoubtedly the secret of any eminence England and Germany may have had, if they actually had it, over the United States in public health matters.

While in Germany some years ago, I asked one of the highest public health officials what the Imperial Government had done to guard the Empire against the spread of cholera. He informed me that dependence had been placed on the local authorities, and that, while theoretically the Imperial Government had authority to assume control of measures to suppress epidemics, practically the exercise of this authority was unnecessary because of the efficiency of local health administration in that country.

With these precedents in the countries mentioned, and local health organization having been the first to be inaugurated and authorized long before state health organizations came into existence, it is singular that local health administration, especially in the interest of rural communities, has not been farther advanced.

RECENT LEGISLATION OF SOME STATES PROVIDES FOR FULL-TIME HEALTH OFFICERS

In the recent past, however, a notable change has occurred for the better. The employment of full-time health officers has been made by several states the keystone of their sanitary policy. Maryland, Massachusetts, New York, Pennsylvania and Wisconsin, and Porto Rico have incorporated this principle in their laws, the purport of which may be briefly reviewed.

The Maryland law divides the state into ten sanitary districts, each of which is placed in charge of a deputy state health officer. Massachusetts has provided for eight districts in charge of district state health officers; New York for twenty or more sanitary districts in charge of sanitary supervisors; the Pennsylvania law authorizes the state commissioner of health to apportion the state into ten districts, appointing to each district a health officer and the necessary assistants to supervise and control sanitary affairs, and in accordance with provisions of law, medical inspectors have been appointed for each county in the state by the State Department of Health; while the Wisconsin law provides for the division of the state into five districts, for each of which a deputy state health officer is to be appointed.

In Maryland, Massachusetts, and Wisconsin it is provided that these deputy state health officers must not engage in any other occupation during their term of office, and also that they will be removed from office only for causes affecting their efficiency or good behavior. In regard to their qualifications, the Maryland and Massachusetts laws require that these men must be physicians trained in sanitary science. The salaries specified in the laws vary from $1,200 to $2,500 in Maryland, not more than $3,000 in Wisconsin, and not more than $3,500 in Massachusetts.

We thus find in these laws recognition of the principle on which good health organization is based: employment of officers properly qualified to conduct sanitary work, with sufficient compensation to justify them in giving all their time to public service, and making this their life work.

The above legislation, however, provides only for state health officers, whose duties in respect to local matters are more or less of a supervisory character. As the laws express it, they are to keep informed of the work of local health authorities, and give these authorities such assistance as may be necessary. Their usefulness, therefore, must depend to a large extent on the existence of efficient local health machinery with which they may work. We are as a consequence back where we started, that is, to the need of strengthening purely local health organization if public health work is to progress as it should.

SOME PROGRESS HAS BEEN MADE IN EMPLOYMENT OF FULL-TIME LOCAL HEALTH OFFICERS

The desirability of this program has been admitted, if not given full effect, in some of the legislation enacted by the state mentioned above. The New York law requires that every city, town, or village shall appoint a competent physician to be a local health officer with a four-year term of office, whose compensation in municipalities having populations of 8,000 inhabitants or less shall be not less than 10 cents per capita, and not less than $800 per annum in municipalities having more than 8,000 inhabitants. In certain other states, similar attempts have been made to

fix minimum compensations, but these were so small as to preclude the idea of their providing for full-time services.

In North Carolina, however, there are now not less than ten full-time health officers, and their number is increasing. In Massachusetts also, the well-known experiment of several towns combining to secure efficient health service has been successful.

The principle of properly qualified full-time health officers appointed by the local authorities with proper compensation and fixed term of office has also been embodied in legislation recently proposed in a number of states, among which may be mentioned Indiana and Kansas.

The Kansas bill proposed to divide the state into not more than thirty sanitary districts, consisting of one or more counties each. A district board of health was to be created and composed of representatives of the county or counties, and each municipality within their borders. Each board thus formed was to appoint a full-time health officer whose qualifications were to be determined by examination conducted by the chancellor of the State University. These district health officers were to be prohibited from engaging in other business, and, in consequence of the importance of their duties, were to receive a minimum compensation of $2,000 per annum. The tenure of office was to be dependent on faithful and efficient performance of duties, and the jurisdiction of these health officers was to extend throughout their respective districts unless any incorporated city therein might elect to maintain a full-time city health officer.

By the above means it was expected to establish sufficiently large health duties to insure the full-time employment and retention of efficient public servants. It is legislation having this last mentioned object that should be encouraged.

ABSTRACT OF DISCUSSION

DR. JAMES ADAMS HAYNE, Columbia, S. C.: We believe in a strong central government in Columbia, the capital, in the management of the public health affairs of the state. Our idea of full-time health officers for a county is that they should be paid by the counties and appointed by and hold office at the pleasure of the State Board of Health. In that way we feel that we remove them from local influences and political entanglements. I am fully in accord with Dr. Kerr. The full-time health officer is most important in public health work. No man can serve two masters. A man doing public health work must at once separate himself from the medical profession, because he at once becomes antagonistic to the profession, that is, the general practitioner. The hardest work that any public health official has to do is to get active cooperation on the part of the general practitioner. The physician is the stumbling block of the public health work. He will not report contagious diseases unless compelled to do so by public opinion. As long as public opinion supports him in concealing his cases of contagious diseases he will continue to conceal them; because he loses his bread and butter if he offends his patients by reporting them to health authorities, subjecting them to the discomfort of having quarantine signs put on their houses, and interfering with their going in and coming out. The public is being educated and soon the doctor who does not report will lose his practice. Whenever we arrive at this condition, then we will get some sort of effective public health work. A physician practicing medicine and doing public health work at the same time is going either to fail as a general practitioner, because he will not have any practice, or will fail as a public health worker, because he will pay attention to his practice and not to his public health work. It is, therefore, absolutely essential to differentiate, and recognize that because a man is a doctor of medicine he is not a doctor of public health. This must be impressed on the public, as they will not realize it. I am certain that soon a man will not take an M.D. in order to be a doctor of public health. He will study the general medical course perhaps two years, but after that will specialize on public health work, which is a distinct branch of the medical profession, and should not require the degree of M.D. in order to practice it. Men who do public health work in future will be those who specialize on public health. They must have a certain field open to them after graduating, and this field must be made attractive by its emoluments.

In regard to the cooperation of physicians and acts originating with the physicians, in South Carolina the State Board of Health is the entire medical profession of the state, and constituted so by law. We have 750 members of the State Board of Health, and they appoint or elect an executive officer, and a man from each congressional district, making seven in all; so that any act of the State Board of Health in South Carolina, or any bill from the state board, must of necessity arise from the medical profession of the state. They elect this committee, and the committee passes regulations and so forth, and then the physicians themselves do not obey their own committee.

DR. A. F. GILLIHAN, Oakland, Calif.: Dr. Hayne did not mention one thing which has forced itself on my attention since I have been in office; that is, as a full-time health officer I can visit other physicians' patients without raising one particle of jealousy on the part of those physicians. This would be absolutely impossible for a part-time health officer in general practice without causing a great deal of animosity, from the very natural fear that he might pick up an occasional patient for himself. The words "to engage in no other occupation" have been used by the speaker. I think this is a good way to express the sentiment. A man doing public health work should not do any other kind of work—should not practice a little on the side. He should not only be occupying his time legally with his position, but he should be morally and actually occupying his whole time with his position. When he is not working at his job he should be dreaming it.

Another condition I desire to mention is the defective administration of public health laws of the state. In California there are some four or five full-time men in charge of public health in municipalities. I am one of these. The State Board of Health can write requesting action on certain matters and I can say "thank you," and throw the communication into the basket. In other words, the State Board of Health of California, as it exists today, has comparatively no authority. It cannot enforce its legislation. I personally do not believe in a health administration consisting of individuals engaged in private practice sitting on a board of health, either in a city or in a state. I am in accord with the New York method and with the United States Public Health Service—whole-time men and whole-time jobs. I believe public health will be advanced only through an organization in which every member is responsible through proper channels to the head of the department. The state should be the central controlling unit; city and country districts mere subdivisions, amenable directly to state control; and finally the state amenable to the federal service. All employees should be on full time. Public health work should be organized along the lines of preventive medicine and not as today, in California, along the old lines of curative medicine. We should lock the door before the horse is stolen. The method in use today is to lock the door after the horse is stolen; in other words, the disease is here and epidemic before the State Board of Health comes in to correct it.

DR. ADELAIDE BROWN, San Francisco: In California we have a law that has been passed on by our supreme court, that any city can do better than a state law but it cannot do worse. So if the city of Oakland is doing better than the state law on all those points they do not need the state law to help. Governor Johnson has signed a bill giving to the State Board of Health $30,000 for two years for the estab-

lishment of a sanitary engineering department; and this we, as members of the State Board of Health, consider the most fundamental thing that could be done for the public health of the state, because water supply and sewage are two prominent questions to which no consulting engineer has time to devote. Governor Johnson signed a bill for the establishment of a bureau of tuberculosis, including a distribution to the counties of the state, that come up to the standard of the bureau in their care of tuberculous people, a per capita assignment. This will jack up the county hospital; and they need the treatment. The bureau of tuberculosis will control the distribution of that money. The hospital will have to take proper care of its tuberculous people before they will get any money from the state.

A very good vital statistics bill was finally passed, although it had fifty-seven changes before it got through.

An antivivisection bill went into the hands of the governor for signature with a pile of telegrams. It was vetoed on the criticism of it on legal grounds by two prominent men. Those of you who have to face antivivisection legislation ought to learn to attack it as soon as it gets to the legislature, and not wait until it gets to the governor.

We have now a milk law which requires general pasteurization of milk. Its enforcement is a matter of state duty.

We have also passed a law advising the use of the prophylactic treatment of ophthalmia neonatorum, and an appropriation for the drugs necessary. We have had also for two years the registration of nurses. Nurses cannot come up for state examination unless the course has been intellectually correct for the young women, and they have been housed correctly, and their course has covered what it should cover and really be an educational course.

The salary of the secretary of the State Board of Health has been increased, which is a recognition for able work. One speaker said that you had to dream public health. I asked a young physician who had a public health position in an adjacent town, a school position, "How many hours do you have to work?" She said, "My salary requires five hours' work a day, and I generally do seven." I think that is practically the proposition. As soon as you limit your day to office hours you cease to be a public health officer. We are taxed by what the work needs and not by any system of hours.

DR. J. N. FORCE, Berkeley, Calif.: It is one thing to get the law, and another thing to get it enforced. Here in California we had pretty nearly enough milk law without this new one, but the burden of enforcing the milk law was put on a few inspectors of the state milk bureau and on the local health officers, and of course the milk law was not enforced. I believe with Dr. Kerr thoroughly in the great need of strengthening local health administration. Dr. Gillihan spoke about jealousy of the local health officer. As soon as the local physicians cease to be jealous of the health officer he is beneath contempt, that is, providing that he is engaged in competitive practice. Now, take an illustration of this jealousy. The local health officer says that before children may return to school they should come to his office for a sort of bill of health. Immediately people who are doing pediatrics in the town say, "Oh, the health officer is steering the children down to his office." A man may have the soul of an angel, he may be extremely high-minded in his motives, but just so long as he engages in general practice or even special practice, I maintain he is subject to that criticism, and he is going to get it from somebody. One way apparently of getting round the full-time requirement is to put in a certain working day, and at its close shut down that section of your mind which deals with the public service just as you would shut down your desk. That does not answer the problem, because competitors are going to be just as jealous of a man in the evening as in the morning or between 2 and 4 in regular office hours. It cannot be done on any split basis. The point of view of preventive medicine is entirely different from that of curative medicine. I tried to mix them. I found they would not mix, and I had to give up the practice end of it.

California got as far as having a bill introduced, printed, and referred to the Committee on Public Health and Quarantine, where it was quietly knifed. Some of the features in the bill were that the state should be districted and these districts should have in no case less than 20,000 inhabitants. To develop a population of 20,000 small counties might combine, or a small city might get enough people from the surrounding country. Large counties were not to be subdivided. These small divisions would be inside of the county. There might be deputy district health officers as well as district health officers; and those deputies might either be graduates in medicine or must have a degree in public health from a recognized institution of learning. We put the public health graduate alongside the doctor of medicine with public health training; not saying that he was either better or worse, but saying that there is now a place in the scheme of things for a deputy health officer, not necessarily a medical officer of health; that is still another function; but the health officer having the public health degree.

DR. WILLIAM SIMPSON, San Jose, Calif.: I think I can explain where Dr. Force seems to be at a loss. I am chairman of the legislative committee which at a meeting held in San Francisco decided to ask the withdrawal of the bill until the next meeting of the legislature, for the reason that the bill had not been presented to the committee prior to its introduction into the legislature, and it was then too late to get an opinion from the health officers of the state, as had been agreed at the Del Monte meeting. We were sure it could not pass in the exact form in which it was presented. Every member of the committee was in favor of the full-time health officer, but we felt, as was expressed at the Del Monte meeting, that the men who had been doing the work should have a voice in such important legislation. I am sure no bill can pass unless it allows the counties and districts to make their own appointments. As a part-time health officer I have not had the difficulties with the general practitioner of which many complain, perhaps because our practitioners feel that the health officer is handy to lay things on, and that as a consultant in contagious cases it saves his families an extra fee and relieves him of a trying responsibility.

In California with its cosmopolitan population your inspector's value depends on his knowledge of languages and his ability to explain and give directions in all the dialects there are. The main difficulties of the health officer are in the families in which no physician is called, and here, if he has their confidence, teachers are of great assistance, and probation officers and truant officers valuable in digging out suspected cases. With most parents there is no effort to conceal reportable cases. The child is not sick enough to have a doctor, but may return to school soon enough to infect the school unless a certificate is required in every case before a pupil is allowed to return. Every minute of every health officer's time should be given to his work, for it is because he is not giving it full time that he not only dreams of his work, but has nightmares as well. In framing laws for this purpose in California, or any other state, however, the power of appointing the local health officer must be left to the local authorities.

DR. T. D. TUTTLE, Seattle: Dr. Hayne spoke of the state having $54,000 and the city $150,000. That on the surface looks badly out of proportion, and undoubtedly is; but I have been trying to find out what health officers are paid in Washington. They will write me, "Our appropriation for public health work in our city or county is $250,000." Beautiful. What does that mean? It means what they call "public health work," garbage collection, sewage disposal, sanitary sewers and all that. It is not public health work. It is some of the branches of public health work, but not as we understand public health work. Our state appropriations are not as big as they appear in a great many places. One of the speakers said that the county health officer service is under the direction of the state board of health, and removable by the state board of health alone. That is nice. We have that in Washington. We proceed to remove some county health officer for failure to perform his duty, and

call on the county commissioners to appoint his successor. Dr. Jones is removed. We receive a notice by next mail, "We beg to advise you that we have this day appointed Dr. Jones county health officer." Beautiful theoretically; tommyrot otherwise. Unless your state board of health has the appointing power, to a certain extent, you have absolutely no control. Let your county commissioners appoint if you want to; but let your state board of health say who in that locality is subject to appointment; and let the state board or other authority have the power to remove him, and when removed provide that he cannot be reappointed until his stigma has been removed by your approving power. Then your central body has a certain amount of control over your local body and cannot be rebuffed by the local body. Your central body says, "Mr. Mayor, your health officer has failed to perform his duty. We call on you to remove him." He is removed. "Thank you. We recognize your power to remove. We immediately reappoint him." I was for ten years or more thoroughly opposed to the idea of the nonprofessional health officer. Now I am not. I have been converted absolutely over to the other party. The medical man, the practitioner, is not going to help the health officer to a very great extent in eliminating disease. Why should he? Why should I, a practitioner, devote my time or a part of my time, or any of my time, we will say, to a town of 300 people without just recompense not only for that time but for the practice that I cut myself out of? What right have the people to ask the practitioner to help them cut out the practitioner's income? They have no right to it and they are not going to get it. Human nature in the physician is the same human nature that we find in the lawyer, the governor, the president or any other politician. I as an individual have no right to ask you as a physician to deprive your children of bread and butter in order that my children should not have the measles.

DR. OTTO P. GEIER, Cincinnati: Dr. Kerr in his opening remarks said, "wise legislation, adequate appropriation and efficient health organization" were the three desiderata. From my experience as a volunteer in health work in our city I take it that one of the fundamentals has been omitted, because health administration cannot be efficient, no matter whether we have full-time health service or part-time health service, unless that service is free from political control. I believe that most counties, most cities, most states are suffering from poor health administration from the fact that they are under a miserable political control; where men with good intentions have their arms tied and their eyes blindfolded, rather than that they have not inherently good qualities and are ready to serve the public. In the direction of a full-time health service I believe that every man is made of good enough stuff, so that when he gives all of his time to the work he becomes efficient. Most men are intelligent enough, and the job itself brings enthusiasm with it, so that most men will succeed if they are given the opportunity and paid sufficient so that they can give whole service to the job. As to how to get the health service out of politics, that is a larger question which we can hardly cover; but I do believe that the medical profession is largely responsible for the fact that health service is jeopardized by political control. I find in moving about the country that very few county organizations are definitely and wholly in accord and working in harmony with the local health officer. They know not what he is doing, and they seem to care less. Now it does seem to me that the American Medical Association owes it to itself to evolve some sort of propaganda that will get the county society interested in the subject of health work, and that we are lamentably weak as a national organization in having failed to appreciate how that reflects on the medical profession, and how it lowers the dignity of the profession, not only in its public health work, but in private work. Nothing so brings the medical profession to full recognition in a community as good, efficient local health work. In Cincinnati up to 1909 the political organization had absolute control of our organization. The people were disinterested. All meat and milk and other inspection work done by that department was miserably done, and we were spending for a city of nearly 400,000, $55,000 a year. Since 1909 it has been under the domination of the medical men of that city. The medical men dictated nominations to the board of health that was created as the result of a pure milk crusade, and since then the board of health is above reproach, and there is not a suggestion of political interference in the board's work. And we have instead of a $55,000 appropriation, $110,000, and that is restricted to strictly health work. I believe with Dr. Kerr that the larger you make the unit the more forceful will be the work, because the more likely you are to get away from political interferences, and petty jealousies; and I think the department gathers a momentum and a dignity because of its size.

DR. O. B. NESBIT, Gary, Ind.: When I hear health officers talk about lack of cooperation of physicians, "I sometimes am inclined to blame the health officer. Unless your public health work originates in your medical society you are going to fail. The health officer who is daily in the newspaper doing his work is not going to get much cooperation from the medical profession. If his campaigns originate in the medical society, and he will get his medical society behind him, he can do anything. A health officer who does not get the medical society in his work is at fault, and can never be an efficient health officer.

DR. J. W. KERR, Washington, D. C.: It is a satisfaction to know that the section endorses the employment of the full-time health officer. Personally I think this is the great problem in this country today in so far as public health is concerned. Few of us realize this fact, notwithstanding there is a great national movement going on for the improvement of health and living conditions. The first laws in the country relating to public health provided for the establishment of local health agencies. The first federal law provided for the cooperation of the national government with local authorities. The first state laws delegated the powers of the respective states to localities, enabling them to establish local boards of health. The relation of the local, state, and federal authorities is therefore fixed; and whether we want to or not we have to recognize that relation. The fact that a particular locality is backward in public health matters does not relieve it of responsibility.

In the desire for larger things we have rather lost sight of the fact that over 52 per cent. of the population of this country live in rural sections, that in these sections lie the real public health problems of the present day, and that the need of public officers is greater in rural sections than in our cities—greater because it is not being met. We have not in the past placed enough dependence on local health organizations. When a society or an individual begins to stir up interest in public health matters, the first thing that is attempted is to establish a commission or agency different from the health department to carry out the work, and the proposed law that is introduced often makes no mention of the local health officer, but aims to establish a new health agency. I think the best example of this is in the tuberculosis laws, of which there has been a mass enacted in the last several years. In many instances the local health officers have not had imposed on them the responsibility for the prevention of tuberculosis, the disease that causes more deaths than any other in the country. This is not the case abroad. In Germany, for instance, they depend on local health organization in local matters. If we in this country expect to advance local health administration and to have it run smoothly so far as the individual is concerned, we must make it our first business to establish a sufficient local organization and give it a living relation with the state and national health organizations.

Predigested Foods.—Experiments of all sorts have been made with predigested foods, compressed foods and the like, but the normal digestion rejects them all. A certain bulk of food is needed to keep the stomach and intestines in order, and unless the juices and ferments required for digestion are called forth in the normal way, the amount secreted will be lowered beyond the point of good health.—J. B. Harrington, *Bulletin*, Kansas State Board of Health, September, 1915.

VARIATION IN THE PLATELET COUNT

ITS CAUSE AND CLINICAL SIGNIFICANCE *

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Remarkably little interest is taken in blood platelets by clinicians, so little in fact that I really hesitate to present a paper on this subject before the section. There are scarcely more than ten or twelve investigators working in this field at the present time, I believe. Nevertheless, platelets are very inferesting and remarkable little bodies, and if time permitted me to enumerate some of the interesting facts and problems concerning them, I feel sure you would be convinced that they are worthy of more attention than they receive. This paper must be confined, however, to a brief report of clinical and experimental observations which are thought to throw new light on some of the factors which influence the number of platelets in the circulating blood. They should aid one, therefore, in drawing conclusions from the platelet count in clinical cases.

The platelet count is altered in a great number of diseases.[1] The alterations noted by different observers have been uniform in but few diseases; in fact, there are few lines of investigation in which opinions have been so divergent. One fact on which there is general agreement is that the count is reduced during the febrile period of acute infectious disorders, and increased during convalescence. This interesting change in the count was first observed by Hayem, and was referred to as a hematoblastic crisis. Hayem considered it an effort at blood regeneration. There are striking exceptions to the foregoing generalization. In Escherich's clinic I made a series of platelet counts in diphtheria—a good example of an acute infectious disease. The count was usually reduced during the febrile period of the affection (lowest count 3,000), and increased during convalescence (highest count 750,000). Occasionally, however, the findings were diametrically opposite to this; that is, the count was normal or increased during the febrile period (highest count 750,000), and normal or reduced during convalescence (lowest count 135,000).

In many chronic diseases the majority of observers have noted an increased count, and some have considered this a general rule. In Romberg's clinic I made a series of counts in tuberculosis—a good example of a chronic infectious disease. In harmony with the results of other writers, the count was usually increased, occasionally very much increased (highest count over 1,000,000). In two instances, however, it was very much reduced for several days (in one case to 55,000, in another to less than 1,000). Likewise in a series of observations made in nephritis, the count was often increased when an acute process was demonstrable or when there was marked evidence of renal insufficiency. Occasionally the count was very much increased (highest count 1,260,000). In one case, however, it was very much reduced (lowest count below 10,000).

One interesting feature has characterized the counts which I have made both in man and in animals. When the individual was normal and remained in a given environment, the count remained relatively constant. When the count was markedly increased or markedly reduced by pathologic conditions, it had a tendency to fluctuate. In Chart 1 is shown graphically the platelet count of four normal individuals in the same environment. During a period of eleven days, there was relatively little variation. It fell constantly between the limits of 200,000 and 400,000. In marked contrast to this is the extreme variability of the pathologic counts shown in Chart 2. In one, a case of advanced tuberculosis, the count varied from less than 1,000 to 720,000. In the other, a case of nephritis, the count varied from 350,000 to 1,400,000.

It is believed that the experiments to be reported subsequently throw light on the cause of these apparently errotic results.

EFFECT OF DIPHTHERIA TOXIN ON THE PLATELET COUNT[2]

Diphtheria toxin offered a most promising means of studying pathologic variation in the platelet count. In the first place, the platelet count is highly variable in diphtheria; in the second place, we might reasonably suppose that this variability is a direct result of the action of diphtheria toxin. For this reason, diphtheria toxin was introduced into rabbits in doses of different sizes and its effect on the platelet count noted.[3]

In Chart 3 are recorded the platelet counts of three rabbits following the injection of a dose of diphtheria toxin which caused death in from three to four days. In each case there was a rapid fall in the count. Necropsy showed degeneration of the marrow in high degree. The nuclei of a majority of the megakaryocytes were vacuolated or pyknotic.

In contrast to the foregoing are the results recorded in Chart 4. Here is shown the effect of sublethal doses of diphtheria toxin in three rabbits. The amount of toxin given in these experiments made the animals appear ill for several days. All recovered, however, and were lively throughout the remainder of the experiment. There was first noticed a marked rise in the platelet count. In one instance the count reached a height of 2,000,000. There was next noted a rapid fall in the count. In one instance the count reached the low level of 4,000. This was followed by a second rise in the count, which in one instance reached a height of 2,000,000.

Deduction.—Diphtheria toxin in large doses causes an immediate fall in the platelet count. This is presumably the result of a poisonous action of diphtheria toxin on the bone marrow. In sublethal doses it causes first a rise and later a fall in the count. The latter effect may be followed by a secondary rise in the count. In some cases the count does not descend below normal, so that the only effect actually observed is an increased count. These changes are believed to be due to an irritant effect of small doses of diphtheria toxin on the marrow or an irritant followed by a poisonous effect.

* From the University of Kansas, School of Medicine, Rosedale, Kan.
* Read before the Section on Practice of Medicine at the Sixty-Sixth Annual Session of the American Medical Association, San Francisco, June, 1915.

1. Determann: Klinische Untersuchungen über Blutplattchen, Arch. f. klin. Med., 1898, p. 365. Helber, E.: Ueber die Zahlung der Blutplattchen im Blute des Menschen und ihr Verhalten bei pathologischen Zustanden, Deutsch. Arch. f. klin. Med., 1904, xxi, 316. Kemp, G. T.; Calhoun, Henrietta, and Harris, C. E.: The Blood Plates; Their Enumeration in Physiology and Pathology, THE JOURNAL A. M. A., April 7, 1906, p. 1022; April 14, 1906, p. 1091. Wright, J. H., and Kinnicutt, Roger: A New Method of Counting the Blood Platelets for Clinical Purposes, THE JOURNAL A. M. A., May 20, 1911, p. 1457.

2. The platelet counts in these experiments have been reported in detail in a previous paper (Duke, W. W.: Causes of Variation in the Platelet Count, Arch. Int. Med., January, 1913, p. 100).

3. Blood platelets in rabbits are more difficult to count than those in man. They are smaller and more variable in size and shape, and unless the ingredients of Wright's solution are balanced with care, the platelets will either clump or go into solution. The precautions necessary to obtain reliable counts have been mentioned in a previous paper (Duke, W. W.: Rate of Regeneration of Blood Platelets, Jour. Exper. Med., 1911, xiv, 263).

THE EFFECT OF TETANUS TOXIN ON THE PLATELET COUNT[4]

Because of the interesting results obtained with diphtheria toxin, tetanus toxin was tried. The counts recorded in Chart 5 were observed in three animals which received subcutaneously a large dose of a recently prepared solution of tetanus toxin (eight times the minimum lethal dose for a guinea-pig weighing 250 grams). Although this amount of toxin caused the death of one animal, and marked toxic symptoms in the other two, there was little change in either the platelet or white count. It hardly seemed worth while to pursue this line of work further.

Deduction.—These experiments are hardly complete enough to justify a sweeping conclusion concerning the action of tetanus toxin. At any rate, it may be said that its effect on the platelet count is not nearly so great as that of diphtheria toxin.

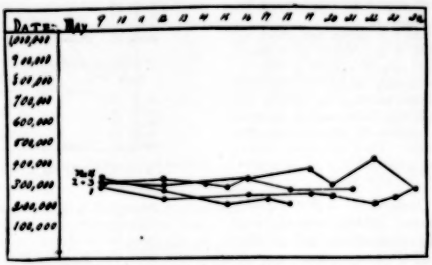

Chart 1.—Platelet count of four normal individuals in the same environment. Note the relatively slight variation of the counts during a period of eleven days.

THE EFFECT OF KILLED TYPHOID BACILLI ON THE PLATELET COUNT[4]

Killed typhoid bacilli were chosen for study because of the marked changes in the platelet count which occur in typhoid fever. It was hoped that some of the poisons which produce these changes might be present in the dead bacilli. Killed cultures were employed instead of living bacteria in order that the dose given could be definitely known and not modified by multiplication of bacteria in the animal. The resulting changes in the platelet count were definite and marked, but not so great as those which followed the use of diphtheria toxin.

In Chart 6 are recorded the platelet counts of three rabbits which received subcutaneously 1,000 million dead typhoid bacilli, suspended in 1.5 c.c. of salt solution. The culture used had been obtained from a case of typhoid fever several months previously. The bacilli were obtained from a forty-eight-hour growth on agar-agar, were suspended in salt solution, and killed by heat (58 C. [136.4 F.] for one-half hour). The animals appeared ill for three days following the injection, but were lively and well throughout the remainder of the experiment. There was in each instance a definite rise in the platelet count which persisted for a few days. In one instance the count reached a height of 1,375,000.

In Chart 7 are recorded results showing the effect of 4.5 c.c. of the same suspension given intravenously instead of subcutaneously. The dose in this case was 3,000 million. Two of the animals were found dead the day following the injection. The one that lived appeared very ill for three days, but was lively and well throughout the remainder of the experiment. There was a marked fall in the platelet count (from 1,210,000 to 340,000) which persisted for a few days. This line of investigation did not promise to yield results of great interest and was discontinued.

Deduction.—The effect of killed typhoid bacilli on the platelet count is marked but not extreme or prolonged. Large doses given subcutaneously increase the count. Large doses given intravenously decreased the count for a few days in the one animal which survived this treatment. One might judge that large intravenous doses poison, and smaller subcutaneous doses stimulate the production of platelets.

THE EFFECT OF BENZOL ON THE PLATELET COUNT[5]

The effect of benzol (benzene, C_6H_6) on the platelet count was studied in both dogs and rabbits. L. Selling[5] had previously shown that benzol poisoning causes a reduction in the leukocytes in man and rabbits and concluded that this was a result of the degenerative changes he found in the bone marrow. It seemed that benzol might have an interesting effect on the platelet count also.

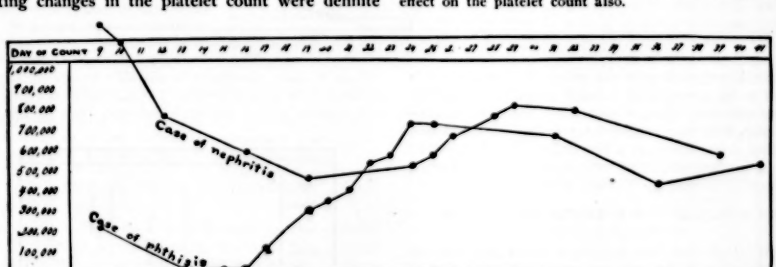

Chart 2.—Platelet counts in a case of tuberculosis and in a case of nephritis. These illustrate the variability of pathologic counts.

Twelve dogs were given subcutaneously several doses of from 2 to 40 c.c. of Merck's benzol. They all showed profound symptoms of poisoning and died in from four days to three weeks after the first injection. The platelet count fell rapidly in almost every instance. Little if any initial rise was noted. Typical experiments are summarized in Tables 1-4.

Necropsy showed in each instance a hyperemic degenerated bone marrow. The nuclei of most of the megakaryocytes were vacuolated or pyknotic.

Rabbits are not so severely poisoned by benzol as dogs, and are better adapted to this study. In Chart 8 are recorded

4. These experiments are of little interest except as recounted here, and hardly justify a more detailed report.

5. Selling, L.: Benzol als Leukotoxin, Beitr. z. path. Anat. u. z. allg. Path., 1911, li, 576.

results showing the effect on the platelet count of five 2 c.c. doses of benzol, given at intervals of twenty-four hours. There was first a marked rise in the count, which in one instance reached a height of 1,230,000. This was followed by a rapid fall in the count, which in one instance reached the low level of 56,000. One rabbit died and the other was killed. The bone marrow was degenerated in high degree. Few megakaryocytes were to be found.

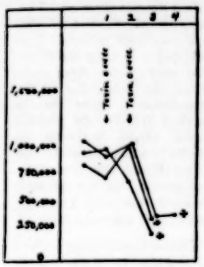

Chart 3.—Effect of diphtheria toxin on the platelet count of three rabbits in doses which caused death in from three to four days.

Chart 9 shows the effect of three 2 c.c. doses of benzol. This caused simply a rise in the count, which in one instance reached a height of 1,780,000. These rabbits showed no visible ill effects from the benzol. They remained lively and apparently well throughout the experiment.

Deduction.—Benzol given subcutaneously in large doses to dogs causes an immediate fall in the platelet count. In smaller doses it causes a lowering of marked fall in the platelet count. There was also a marked fall in the leukocyte count.

TABLE 1.—EFFECT OF BENZOL ON DOG 1

Date	Benzol c.c.	Platelet Count
April 11	10	248,000
April 12	15	.....
April 13	..	46,000
April 14	Found dead	

TABLE 2.—EFFECT OF BENZOL ON DOG 2

Date	Benzol c.c.	Platelet Count
April 18	40	368,000
April 19	40	410,000
April 20	..	132,000
April 21	Found dead	

TABLE 3.—EFFECT OF BENZOL ON DOG 4

Date	Benzol c.c.	Platelet Count
April 20	..	280,000
April 21	10	250,000
April 22	..	85,000
April 23	..	116,000
April 24	Found dead	

TABLE 4.—EFFECT OF BENZOL ON DOG 5

Date	Benzol c.c.	Platelet Count
April 21	20	377,000
April 22	..	276,000
April 23	5	.....
April 24	5	282,000
April 25	..	44,000
	Found dead	

Chart 4.—Effect of sublethal doses of diphtheria toxin on the platelet count of three rabbits.

the count, but the effect is not so rapid. This effect is believed to be a result of a toxic action of benzol on the bone marrow. Benzol given in large doses to rabbits causes first a rise and later a fall in the count. In smaller doses it causes a rise only. This is believed to be an irritant effect of benzol on the marrow or an irritant followed by a toxic effect.

THE EFFECT OF THE ROENTGEN RAY ON THE PLATELET COUNT[6]

Heineke[7] found that intensive doses of the Roentgen ray cause a reduction in the leukocyte count and destruction of the parenchymatous elements of the marrow. It seemed possible that this agent might also have an effect on the platelet count.

Chart 10 shows the effect of an intensive dose of the Roentgen ray on the platelet count of three rabbits. (Exposure made at 13 inch anode distance with Coolidge tube, 2 mm. aluminum filter, 7 inch spark gap, one-half erythema dose with Hampson's pastille. Exposure repeated in two days with three-fourths erythema dose at skin.)

These were typical experiments. A similar result was obtained in six other cases. In every instance there was a

Chart 11 shows the effect of a shorter exposure (one-fourth erythema dose at skin through 1 mm. aluminum filter). In each instance a rise eventually followed. One of the three

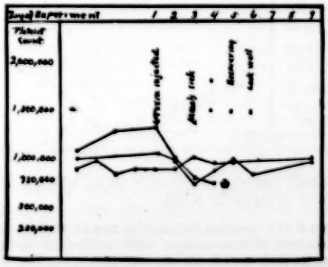

Chart 5.—Effect of large doses of tetanus toxin on the platelet count in three rabbits.

rabbits had a very high count to begin with. In this case a rapid fall preceded the rise. A second dose of the same intensity caused in these rabbits a rapid fall in the count. In these experiments a leukopenia also appeared.

6. These experiments were carried out in collaboration with Dr. E. H. Skinner, and will be reported in detail subsequently.
7. Heineke: Untersuchung über der Einwirkung der Röntgenstrahlungen auf der Knockenmark, nebst einigen Bemerkungen über die Röntgentherapie der Leukämie und Pseudoleukämie und des Sarkoms, Deutsch. Ztschr. f. Chir., 1905, lxxviii, 196.

Deduction.—The Roentgen ray in massive dose causes a fall in the platelet count. In smaller doses it causes a rise in the count.

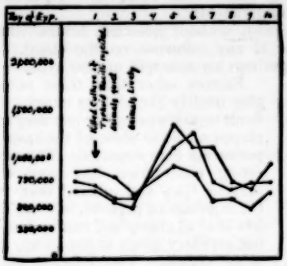

Chart 6.—Effect on the platelet count of 1,000 million killed typhoid bacilli given subcutaneously to each of three rabbits.

Heinecke's experiments showing that the Roentgen ray in large doses is followed by degeneration of the marrow suggest that the foregoing results are the effect, respectively, of toxic and stimulating doses of the Roentgen ray on the bone marrow.

THE EFFECT OF TUBERCULIN ON THE PLATELET COUNT

Tuberculin was given subcutaneously or intravenously, in doses varying from 0.1 to 5 c.c. in eighteen experiments. It was hoped that some of the interesting changes in the platelet count observed in tuberculosis might be reproduced. Tuberculin caused a slight change in the platelet count in every instance. When injected subcutaneously it caused a rise in the count which persisted for a number of days. The effect, as a rule, was not great or prolonged, unless some complication, such as anæmia or ulceration of the skin, developed. It seemed impossible to give subcutaneously a dose great enough to cause a fall in the count. This was accomplished in all of the six experiments in which tuberculin was given intravenously, but the lowering of the count was transitory (two days) and was quickly followed by a rise. Second doses, given from six to eight weeks after the first, caused a similar change. In Charts 12 and 13 are recorded six typical experiments.

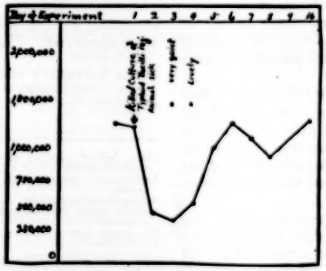

Chart 7.—Effect on the platelet count of 3,000 million killed typhoid bacilli given intravenously to one rabbit.

Deduction.—The effect of tuberculin on the platelet count is similar to that which follows the use of typhoid bacilli. It is marked but not great. Large doses given subcutaneously invariably cause a rise in the count. Large doses given intravenously cause a fall in the count which is quickly followed by a return to normal or a rise.

GENERAL SUMMARY AND THEORETICAL CONSIDERATIONS

The experiments reported here are believed to have disclosed several facts which can be applied to explain the behavior of the platelet count in certain types of diseases. *First of all, it may be stated that it was possible to reduce the platelet count by using a large dose of any agent which in smaller dose caused a rise in the count and vice versa.* The agents used were varied in character, namely, toxins, bacterial emulsions, a chemical poison and the Roentgen ray. Some of the agents used had a rapid and profound effect on the count (diphtheria toxin and benzol). Others had a smaller effect (the Roentgen ray, typhoid bacilli and tuberculin). One of them (tetanus toxin) had almost no effect, although the dose used killed one of three animals and caused toxic symptoms in the others. *The agents with which it was possible to produce the most rapid and extreme rises in the count, namely, diphtheria toxin and benzol, were also the ones with which the most rapid and extreme falls in the count were produced.*

These facts are in harmony, I believe, with the numerous well-known biologic observations concerning stimulants or irritants which act as poisons if employed in sufficient dosage. The most powerful stimulants are also the most powerful poisons, as a rule.

The foregoing generalizations may be employed in the following way to explain the changes in the platelet count in disease. It is believed that diseases in which the platelet count is effected directly by circulating poisons may be divided into two classes.

In the first class come diseases in which powerful irritants to the platelet-forming organs (such as diphtheria toxin and benzol) are elaborated. It is believed that, in diseases of this sort, both high and low counts frequently occur, and also rapid changes from high counts to low counts and vice versa. Some change in the count might be expected even in the mildest cases. That is, when the toxin has such a profound influence on the count, we should expect that a sufficient quantity would be formed in nearly every case, to have its irritant effect, at least. We should also expect that the irritant dose would be exceeded frequently so that the lowered counts would be found as often, or perhaps more often, in the average run of cases, than high counts. The first phase of

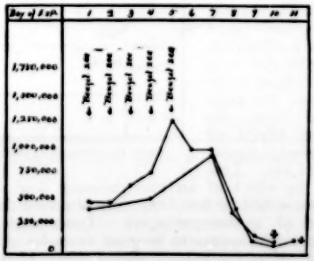

Chart 8.—Effect of five 2 c.c. doses of benzol in two rabbits.

Hayem's hematoblastic crisis (the fall during the febrile period of an acute disease), according to this view, would be the effect of a quantity of toxin which acted as a poison to the platelet-forming organs. The second

phase (the rise during convalescence) would be a secondary rise after neutralization of the poison. This type of change is the rule in diphtheria—an excellent example of an acute infectious disease. The opposite type of change observed in diphtheria, that is, a rise during the febrile period followed by a fall during convalescence, is believed to occur when the toxemia is less intense. *A hematoblastic crisis would be the rule, then, in all acute diseases in which toxins or irritants are produced in the average case in quantity sufficient to act as a poison to the platelet-forming organs.*

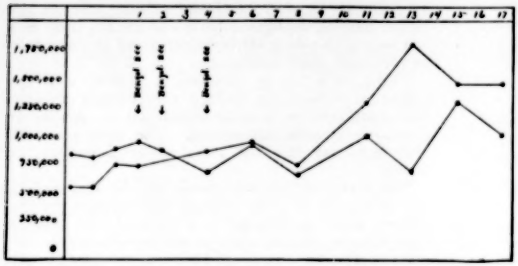

Chart 9.—Effect of three 2 c.c. doses of benzol on the platelet count in rabbits.

Chart 14, in which is shown graphically the effect of varying doses of diphtheria toxin on the platelet count in rabbits, illustrates graphically experiments which seem to be a substantial basis for these statements, and shows the extent to which the platelet count may vary in different grades of the same pathologic condition.

In the second class come diseases in which the irritants produced are mild. One might infer that the counts would here follow the same general law, but that the relative frequency of increased and decreased counts would be different. Increased counts in this case would be the rule. Perhaps a mild irritant, the effects of which could continue as an irritant for a prolonged period, would give rise to a greater increase in the count than the more powerful ones, the poisonous effects of which would appear more quickly. Low counts, the effect of an overwhelming dose, could occur, but would be less frequently observed than in the case of a stronger agent. Tuberculosis and nephritis would appear to be good examples of such a disease. Here the count is almost always increased, but is in rare instances reduced. The experiments with killed typhoid bacilli and tuberculin are thought to be imitations of this type of disease. It was easy to increase the count with these agents. A reduced count was brought about only by giving very large doses intravenously.

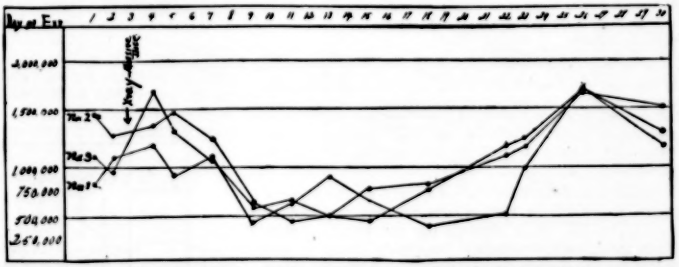

Chart 10.—Effect of an intensive dose of the Roentgen ray on the platelet count of three rabbits.

One might believe, and perhaps with reason, that there exist toxins which can have only a poisonous effect on the marrow, and can never increase the count. The existence of such, however, is not proved by these experiments.

There exist, without question, toxins which have very little if any influence on the count. Tetanus toxin is perhaps an example of this type.

Factors other than those noted above also modify the platelet count. It is difficult to say whether or not they may have played a rôle in some of the cases and experiments here reported. The very interesting observation has been made by Hayem, Gley and others,[8] that, following the injection of peptone, in dogs, the platelets tend to clump and can be found forming capillary plugs in the lungs, liver and other organs. Von Behring and others observed the same phenomenon during anaphylactic shock. I endeavored to find the degree to which the platelet count could be lowered in dogs by an intravenous injection of peptone. The count was lowered without question, but accurate counts were impossible on account of clumping of the platelets. Masses of 100 or more were observed. The day following the injection, the count had returned to normal—in fact, it became greater than normal. The tendency to clumping was no longer noticeable.

TABLE 5.—EFFECT ON THE PLATELET COUNT OF A DOSE OF HORSE SERUM GIVEN TO SENSITIZED RABBITS

	Rabbit A	Rabbit B
Count before injection of second dose of serum	1,320,000	1,610,000
Intravenous injection of horse serum	0.5 c.c.	0.5 c.c.
Anaphylactic symptoms	Very slight	Marked
Platelet count five minutes after injection	2,120,000	490,000
Six hours later	Animal well	Complete recovery
Platelet count	2,040,000	1,060,000

The experiments given in Table 5 show the change in the platelet count in two rabbits which received 0.5 c.c. of horse serum. Each had been sensitized by an injection of horse serum, nine weeks previously. Rabbit B displayed marked symptoms of anaphylactic shock. The platelet count in this animal was reduced

8. Gley: Compt. rend. Soc. de biol., 1896, iv, 44. Von Behring: Deutsch. med. Wchnschr., Oct. 15, 1914, xl, No. 42.

for a short time, and a slight tendency to clumping was observed. Rabbit A displayed little or no evidence of shock. The platelet count was actually increased. No clumping was observed.

The experiments given in Table 6 are reported for comparison with the preceding. In these experiments, varying doses of horse serum were given intravenously to unsensitized rabbits. The changes are small.

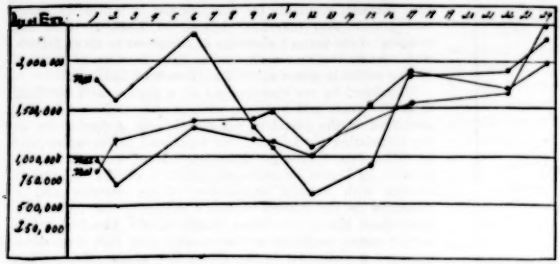

Chart 11.—Effect of a smaller dose of the Roentgen ray on the platelet count of three rabbits.

Other factors also modify the platelet count. Richardson[9] and others state that it is increased after hemorrhage. Kemp, Calhoun and Harris,[1] and Webb[10] find that it is increased by altitude. Rebaudi[11] reports a marked increase during pregnancy. Kemp, Calhoun and Harris state that it is higher in cold seasons than in warm seasons.

To conclude, it may be stated that evidently several factors play a part in modifying the platelet count in disease. This fact, however, does not conflict with a conclusion that, in many diseases, substances are formed which may act as either irritants or poisons to the platelet-forming organs, and, depending on the intensity of their action, may exert their influence either to increase the count or reduce it. If this conclusion is substantial, the apparently contradictory reports in the literature on platelet counts seem in reality harmonious.

CONCLUSIONS

It is believed that the experiments here reported may be employed to explain the behavior of the platelet count under pathologic conditions. Primarily, it may be stated that every agent with which the animals were treated, which exerted any marked influence on the platelet count, increased the count when small doses were used and reduced it when larger doses were given. The agents employed were varied in nature, namely, diphtheria toxin, benzol, the Roentgen ray, killed typhoid bacilli and tuberculin. Tetanus toxin, in the dose used, had very little effect on the count. It is reasonable to conclude, I think, that the foregoing agents in the smaller doses acted as irritants to the platelet-forming organs, and in this way caused a rise in the platelet count. In larger doses they acted as poisons, or first as irritants and then as poisons, and caused thereby a fall in the count, or a rise followed by a fall.

The experimental data harmonize with observations on the platelet count in the clinical conditions thus far studied. For example, in a large number of counts made by the writer in diphtheria, tuberculosis and nephritis, both increased and reduced counts were observed. A review of the literature shows that in most diseases in which the platelet count is profoundly altered, both increased and reduced counts have been observed. In the light of the foregoing experiments, these clinical observations would not appear contradictory. It is believed that in almost every disease in which the number of platelets is markedly influenced by circulating toxins or poisons, the count may be either increased or reduced according to the intensity and duration of their toxic action on the bone marrow. It must be added here that, as has been mentioned in the text, the platelet count may be influenced also by other factors, such as altitude, hemorrhage, peptone poisoning, anaphylaxis, and also by some of the so-called diseases of the bone marrow.

One other important generalization is possibly justified. In certain chronic diseases, tuberculosis and nephritis for example, the count is increased as a

TABLE 6.—EFFECT OF VARYING DOSES OF HORSE SERUM ON THE PLATELET COUNT IN RABBITS

	Rabbit 1	Rabbit 2	Rabbit 3
Normal count	2,000,000	1,450,000	1,450,000
Horse serum	0.001	1 c.c.	5 c.c.
One hour after injection.	1,910,000	1,780,000	1,270,000
Twenty-four hours after injection	2,380,000	2,220,000	1,660,000

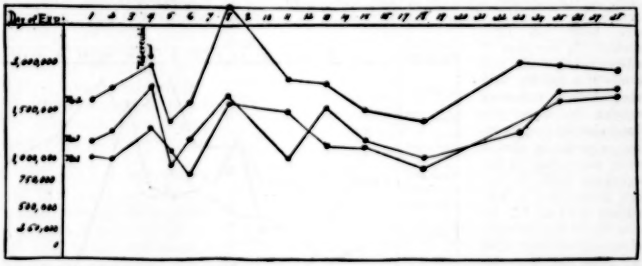

Chart 12.—Effect on the platelet count of 3 c.c. of Koch's old tuberculin given intravenously to three rabbits.

9. Richardson, F. L.: The Effect of Severe Hemorrhage on the Number of Blood Platelets in Blood from the Peripheral Circulation of Rabbits, Jour. Med. Research, 1904, viii, 99.

10. Webb, Gilbert and Havens: Blood Platelets: Some Studies in Connection with Altitude and Tuberculosis, Preliminary Report, Colorado Med. Jour., 1914.

11. Rebaudi: Blood Platelets During Pregnancy, Labor, Puerperium and Menstruation and in the New Born, Am. Jour. Obst., 1907, p. 473.

rule and reduced in rare instances only. In other diseases, diphtheria, pneumonia, and typhoid fever, for example, the findings are diametrically opposite; that is, the count is reduced as a rule and increased in rare instances. It is believed that in the former type of diseases (increased counts the rule), the platelet count is influenced by some mild irritant to the platelet-forming organs, such as killed typhoid bacilli or

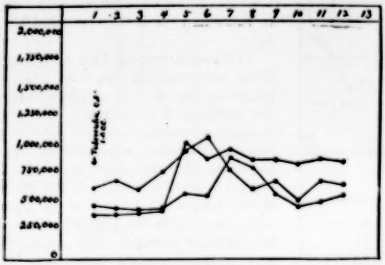

Chart 13.—Effect on the platelet count of 1 c.c. of Koch's old tuberculin given subcutaneously to three rabbits.

tuberculin, and that for this reason, an irritant effect is the rule, and a toxic effect, the result of an overwhelming dose, is not reached in the average case. In the latter type of disease (reduced counts the rule), the platelet count is believed to be influenced by some powerful irritant to the marrow, such as diphtheria toxin or benzol, so that the irritant dose is exceeded in the average case and a reduced count is the rule. The few cases showing an increased count are probably the milder ones in which the toxic dose is not reached.

ABSTRACT OF DISCUSSION

DR. GERALD B. WEBB, Colorado Springs, Colo.: Dr. Duke's contribution is most welcome, inasmuch as blood platelets have been too little studied. In one case of miliary tuberculosis, and in one of a rapidly fatal tuberculosis following measles, we found the blood platelet count very low, whereas in almost every other case of tuberculosis both in human beings and in laboratory animals, we have found the numbers increased. Nature does not often increase elements without design. Thanks to Metchnikoff, we can now better understand the reason for a leukocytosis. More careful investigations should discover the reason for the increase, under certain conditions, of blood platelets. From our own experiments we have found that (1) blood platelets either contain or supply opsonin; (2) blood platelets are increased at a high altitude; (3) blood platelets can be increased by an artificial hyperemia of the marrow of long bones; (4) blood platelets are increased in carbon monoxid poisoning; (5) blood platelets appear to be increased in the early stages of measles; (6) blood platelets added to a minimum lethal dose of virulent tubercle bacilli do not constantly prevent infection.

DR. S. H. HURWITZ, San Francisco: For a number of years investigators have been interested in the relationship existing between the formed elements of the blood and the factors of coagulation. Ever since the platelets were first recognized as distinct morphologic entities and not as disintegration products of leukocytes, the relationship of these elements to hemorrhagic diseases became a subject for investigation. Until recent years, however, we did not have methods available for studying the factors of coagulation and it was therefore difficult to find out what the relation of the formed elements of the blood to these factors was. At the present such studies have been made possible by the methods given us by Dr. Howell of Baltimore.

Stimulated by the observations on a patient with bleeding from the gums and purpura, with anemia and considerable reduction in the platelets, associated with a diminution in the circulating prothrombin, we attempted to reproduce this condition experimentally. Like Dr. Selling, we were able to produce by benzol injections in rabbits a picture of aplastic anemia with marked destruction of the marrow and a reduction in the formed elements, especially the leukocytes and blood plates. In some instances the blood platelets were reduced to 30,000 and associated with this drop there occurred a reduction in the circulating prothrombin. This observation is in harmony with the proof that blood platelets contain prothrombin, although it is unlikely that they are the only source of this factor. We were also able to follow the antithrombin and fibrinogen in these same animals. These two factors have been found to fluctuate little from the normal.

DR. W. W. DUKE, Kansas City, Mo.: The platelets surely must perform some very active function in the body, varying in number as they do under so many conditions. The observation of Dr. Webb that platelets contain opsonin is interesting indeed, and it would not be surprising if it were discovered that platelets play an active rôle in immunity. The observation of Dr. Hurwitz that blood in which the platelet count is reduced, contains less prothrombin than normal blood, is in line with what we might expect from the work of Morowitz and Bayne-Jones showing that platelets contain prothrombin. With these facts known, it is a little surprising to find that blood which is nearly free from platelets may clot with great rapidity. In a number of patients with purpura hemorrhagica and also in an animal

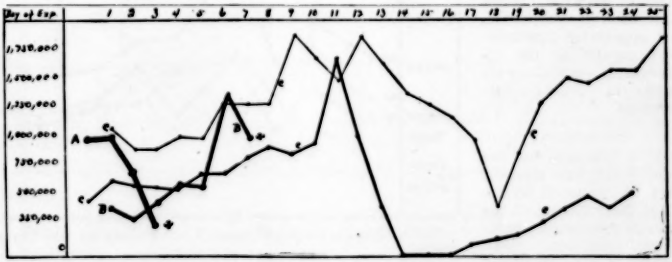

Chart 14.—Effect of diphtheria toxin in varying dosage on the platelet count in rabbits: (*A*) rapidly fatal dose; (*B*) smaller, but fatal dose; (*C*) sublethal doses.

with purpura hemorrhagica produced with diphtheria toxin, the platelet count varied from 10,000 to less than 1,000. The coagulation time of blood obtained from the ear was invariably normal. Platelets, without question, play an important rôle in stopping hemorrhage. It seems probable that they accomplish this through the rôle they play in the formation of thrombi. Platelets possess a property of rapidly adhering in masses to the wall of a blood vessel at points where the intima is injured, and these masses apparently

form a nidus for the attachment of fibrin and the laying down of a thrombus. They do this, perhaps, by liberating their thrombin just at the point where it is most useful. Both platelets and fibrinogen seem necessary for the formation of thrombi, for if either is reduced nearly to a point of absence, bleeding from cuts is prolonged.

Dr. Webb's observation that the number of platelets may be increased by passive hyperemia is interesting and important. Dr. McKinley and I have tried this out in tuberculous patients at Dr. Webb's suggestion, and find as he did that the count can often be increased for a number of days in this way. It offers a very simple means for increasing the platelet count artificially. The Roentgen ray may be used in animals either for increasing or reducing the count. It is possible that some therapeutic application for this may be found.

THE INTESTINAL TRACT*

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BOSTON

Man's interest in the intestinal tract begins at birth and ends only with death. Through its long and tortuous canal pass the foods that supply the body, and here in its laboratory are carried on those complicated chemical and mechanical processes that allow these foods to be fitted for the use of the animal machine, and finally eject the unused portions. Anything interfering with any of these functions is a cause of discomfort, and even of death itself. Is it not natural, therefore, that those having the physical well-being of man in their care, should, from the earliest times, have sought to remedy bodily ills by medication applied to, or through, this channel, confidently hoping that all human disorders might thereby be cured. This hope and even belief still exists, filling the purse of the quack and "patent medicine" manufacturer, who today largely occupies the place of the sorcerer and medicine man of savage tribes.

Medication of some sort, then, was the only method for years, so far as we know, of treating the digestive tract. There were bold and not unskilful surgeons in the older civilizations, as witness the formidable operations on the skull and perhaps the brain, shown by the great number and variety of trephinings done with instruments of stone, found in Peru and elsewhere. These mummies and their bones have handed down their story through the centuries, and in them we can recognize the operative successes and failures as plainly as though these men were alive today, or perhaps on the necropsy table.

There is no such record, however, of operations on the intestinal tract; perhaps they were performed, but even in the mummy we find nothing to suggest it, though in the mummy have been found evidences of appendicitis. It is possible that in the prehistoric as well as in later days, torn or cut intestines protruding from a wound may have been sewed up and the patient cured.

The surgeon first operated on the beginning and the end of the intestinal tract, operations on the esophagus and rectum being done at a comparatively early date, but the peritoneal cavity was supposed to be such a dangerous region that few invaded it.

The real beginning of intestinal surgery was not more than fifty years ago, and step by step it has advanced until today there is not an inch of the canal or any of its appendages that has not been attacked. It may be well to briefly mention here some of the things that have already been accomplished.

Beginning with the esophagus, we find that the congenital or acquired malformations, like pouch, may be cured, sometimes by excision, sometimes without, strictures dilated, and malignant growths at least exposed to the view of the surgeon. Excision of such growths, however, is still in the early experimental stage and should not be attempted by the general surgeon. There is no organ more difficult to reach or more dangerous to operate on than the esophagus in the thorax. Some day, let us hope in the not distant future, excision of esophageal growths will be one of the recognized surgical procedures.

Certain surgeons who have had large experience in thoracic work, experienced in the technic of differential pressure, either by the use of the cabinet, or with intratracheal anesthesia, are working and experimenting in this field, and excision of the esophagus, in man, should be left in their hands for the present—enough has already been accomplished to show the probability of future success.

The stomach is certainly a most tolerant organ. For years it is generally either starved or overfed. It must receive and take care of all kinds of substances from milk to clay. It is tanned with tea, irritated by alcohol, tortured by drugs, alternately scalded and chilled, and yet it works on, doing its best though receiving the blame which should fall on its owner or the other organs. Some people complain of their "bad stomachs" all their lives, while in reality the poor thing is not at fault and is doing its best. Its great failing is that it is too sympathetic, reflecting the troubles of its neighbors.

It is also abused surgically without showing resentment. Being by nature a cleanly organ and not infested with the dangerous fauna and flora of the lower intestine, it is operated on with comparative impunity. Were this not true, the daily mortality from operative procedures, some good, some indifferent and many bad, would be enormous. It is cut into and cut out, it is stitched into faulty positions, puckered and drained, properly or improperly, but still the patient survives. Formerly, the would-be surgeon, just out of the medical school, began his operative experiments by amputating a breast, one of the most difficult of operations, by the way, if properly done, but now he is not satisfied until he has done something to a stomach.

In 1881 it was my great privilege to see Billroth do the first successful resection of the pylorus—that was really the beginning of gastric surgery as we know it today. Step by step it has advanced, until now there are few more brilliant results to be obtained by the skilful and judicious operator than in this field. Men are saved from years of suffering, invalidism and death itself by the surgeon who knows his business.

The question of the treatment of malignant disease of the stomach has been pretty thoroughly settled in the surgical mind, radical excision in early cases giving a fair percentage of cure with slight operative mortality. Excision of chronic ulcers is an accepted fact, and operations for pyloric stenosis, whether by the Finney operation or by gastro-enterostomy, give brilliant results. Duodenal ulcer has become a surgical disease in a great measure, the only question in the

* Read before the Section on Surgery, General and Abdominal, at the Sixty-Sixth Annual Session of the American Medical Association, San Francisco, June, 1915.

choice of operation being that of excision or non-excision of the affected area. In passing, mention should be made of the importance of a thorough examination of the gallbladder in all cases in which an operation is being done for pain or other symptoms in the right upper quadrant. We have all been disappointed after an apparently successful operation for well-marked duodenal ulcer to find on second operation that the symptoms were partly due to an inflamed "strawberry" gallbladder, or small, previously unrecognized, gallstones.

Having spoken of the gallbladder, whose troubles so closely resemble those of the intestinal tract itself, and for which they are often mistaken, I cannot forbear to touch on a question that has always interested me, namely, shall it be excision or drainage in cholecystitis. For years I advocated and practiced excision in the large majority of cases, until, persuaded by surgeons of larger experience than mine, I adopted drainage for a time, only to return with greater zeal to excision, feeling sure that my ultimate results would be better. The greater mortality of cholecystectomy is due, I am sure, to the fact that it has been done in the severer cases that could only be cured in that way. There is, however, no doubt that in inexperienced hands cholecystostomy is safer, and under such circumstances should be the operation of choice. Many of my former advisers today excise in a large proportion of their cases.

It should be borne in mind that in certain desperate cases of large perforations of the duodenum, when the condition of the patient is so bad that a prolonged operation will not be tolerated, simple drainage with gauze or a large tube, with no attempt at closure of the opening, will often save the patient's life, and the resulting fistula may close of its own accord.

With the small intestine the surgeon has less to do. Occasionally tumors are met, intussusception being one of the common ways of first disclosing their presence, but we may have that rare type of malignant growth, a lymphoid tumor, which may have become generalized before symptoms have called attention to its presence. Adhesions or kinks from acute inflammation are the chief source of danger in this region, and in acute obstructions above the cecum the question of gallstone ileus is always to be borne in mind.

Near the ileocecal valve, congenital or acquired peritoneal folds (the so-called Lane's kink), should always be looked for in operations in this region, for in the past many of the unsuccessful attempts to cure attacks of supposed chronic appendicitis were due to the failure to recognize this very common condition, which is so often the cause of severe ileal stasis.

And now we come to that much abused and vicious organ, the appendix. Probably more necessary operations on the appendix have been left undone, and more unnecessary operations have been done on it, than on any other organ in the body. The first symptoms of inflammation should be a reason for its removal, but too often are these symptoms mistaken. The retrocecal perforation of the appendix is often unrecognized until a rupture of the abscess causes a diffuse peritoneal infection, or, on the other hand, the innocent appendix is removed, and the offending fallopian tube, ureteral stone, gallbladder or Lane's kink is left behind. The surgeon should be careful and conservative in his diagnosis of the appendiceal trouble and radical in his treatment. It must always be remembered that the stomach is often blamed for trouble that really exists in the appendix.

The large intestine has been a fruitful field for much heated discussion and surgical adventure of late. Since the advent of the Roentgen ray, much has been learned and many mistakes have been made. It is safe to say that the old ideas of the positions of the abdominal viscera have undergone a great change in the last few years. Their positions and shapes are becoming better known, and what a short time ago were considered malpositions or malformations are now known to be but slight variations from the normal, if there is such a thing as a normal arrangement. The large intestine is a marked example of this rule; it never lies in the regular lines and curves as shown in the diagrams of the old anatomist. There are innumerable variations, due to congenital or acquired folds of the peritoneum, and many have too quickly decided that anything unusual must be a serious physical defect, and the cause of certain trains of symptoms. The rules for the treatment of malignant disease are well recognized, but it is in questions of abdominal plumbing, if we may use the term, that opinions differ most widely. Fecal stasis is recognized as an evil, and many operations have been designed and performed for its relief that are useless or do positive harm. The surgeon who looks on every such case as one whose faulty plumbing must be restored mechanically to a diagrammatic form is sure to make mistakes, having overlooked the real source of the trouble. Ptosis does not, or should not, always mean operation.

The interrelation of fecal stasis and the neuroses and autointoxications of all kinds are subjects that require further investigation and study, though day by day and year by year our knowledge is steadily advancing. The medical clinician, the neurologist, the psychologist, the bacteriologist must each do his part, and they should be aided, not overshadowed by the roentgenologist, whose mechanical findings may so often be misinterpreted. Viewed from the standpoint of any one of these, the observer sees but one part of the composite picture.

The relation of intestinal abnormalities and distortions to mental disease has always interested me. It is certainly a suggestive fact that a considerable number of cases of megacolon and giant sigmoid are seen in insane asylums. I have, by an operation for acute volvulus in such a case, restored a man to a normal mental condition, after he had been a frequent inmate of the asylum for a considerable number of years. In all these cases of suspected faulty plumbing, it is generally harder to decide which individual needs to be operated on and just which form of operation should be chosen, than to do the mechanical part of the operation itself. With the abdomen open before us it is not always easy to decide which fold or which adhesion is at fault, whether the intestine can be sidetracked or whether it needs excision, and all these factors enter into the subsequent cure or failure. The intestine is not a simple pipe that can be cut and soldered, or placed in what is considered the proper position and kept there, but it is a thin-walled affair in constant motion, always expanding or contracting, and changing its position with the position of the patient and the load it has to bear. We are apt to see only the collapsed intestine on the operating table and cannot picture to ourselves that same intestine distended, partially paralyzed after operation, and carry-

ing its load of gas and fecal matter later. What we know already has been learned at the cost of many failures, and greater future knowledge must come from earnest, careful investigation and honest observation and study of the subsequent history of each individual case. We must try to find out why one case is a success and another, treated in the same manner, is a dismal failure. We must endeavor to recognize those bands or adhesions about the intestine which are of importance in operation and those that are unimportant. The less traumatism to which we subject the peritoneum the better.

We do not know why certain simple operations are followed by extensive and firm adhesions, while others much more extensive, or in the presence of sepsis, are free from these dangerous results. Gentleness in manipulation, and wet gauze instead of dry, leaving as few raw surfaces as possible, probably help. It is assuredly a fact that adhesions may in many cases be divided, and large raw surfaces left, without the formation of new, or the reformation of old adhesions. Until we understand the reason for this and the correct method to be followed to avoid them, we can never be sure of our ultimate results.

Great advances in the treatment of intestinal stasis have been made of late and many patients saved and made useful citizens by suitable operation on the large intestine, but cases should be carefully studied and selected before operating.

The large intestine is more frequently the seat of obstruction than any other part of the tract. An operation, to prove successful, should always be done early, and the cardinal rule is not to attempt too much, and an anastomosis or the temporary artificial anus will save many lives when the primary resection will prove fatal. Excision of a growth may be done later with much greater safety, and the removal of the disease, if it is malignant, can be much more radical. Never leave a patient with an artificial anus without his full knowledge of what it means, and his consent.

Diverticulis is one of the affections of the large intestine that is not infrequently met, and the choice of operation, or even of no operation, is often difficult. When there is a perforation there is of course no question, the abdomen must be opened and the abscess drained the same as an appendix abscess. We sometimes mistake the chronic or subacute cases for malignant disease and do a resection, our mistake in diagnosis being discovered only by the pathologist.

One meets undoubted cases of diverticulitis with recurring symptoms. These cases, as a rule, are relieved though not cured by thorough lavage. What are we to do in such cases? We know that the presence of the pathologic condition is a menace to the health and life of the patient and may be the starting point of malignant disease. On general principles we should remove the offending region, as we would remove a chronic appendix, but the operation is not a safe one and the mortality must be high, especially in those cases in which the lower end of a short sigmoid is involved.

The modern operation for cancer of the rectum gives such good results that radical extirpation should always be attempted in suitable cases.

Up to this point I have considered only the more important operations on the intestinal tract and their advisability, but now comes a more serious question—by whom shall these operations be performed? This applies to all surgery, but particularly to intestinal work, for any man who begins his experiments on man attains final success only at the expense of many lives and much unnecessary suffering. No man should ever attempt a serious operation until he has had a thorough training under a good master.

Throughout the country have sprung up thousands of small hospitals which mark a tremendous advance in the cause of human welfare, and in which is done an enormous amount of surgery, good and bad. In many of these hospitals the staff consists of all the reputable physicians in the town; in other words, any man who holds a degree, whatever his surgical experience, can send his patients there and operate on them. Many of these men have had no suitable training and their work can be imagined, but it is seldom described. The establishment of the American College of Surgeons is a step in the right direction, but only a step. It is perhaps impossible at present, but in time the rule may be made that no man shall practice surgery until he has served a term as an intern at some good hospital and has had a chance to observe and assist competent operators.

Medical education is constantly advancing, and greater efficiency is the aim always before us. At present, large numbers of practitioners, young and old, visit the different famous surgical clinics of the country, and then go home and try to repeat the operations that they have seen performed so easily by the master hand. Such observation and experience, to the man not properly trained, only renders him more dangerous to the community in which he lives. For intestinal work especially, it is unusually dangerous for a man to operate on a human being until he has performed many operations on living animals. Until he has the necessary skill and technic, he is bound, unless possessed of unusual ability, or more often luck, to have many failures, and a failure means a human life.

A witness before a parliamentary committee in England once said: "Gentlemen, with or without the sanction of the law, vivisection must and will continue, surgery cannot stand still, and is it not better that vivisection be done on the lower animals rather than on you, your wives or your children?"

I once assisted a famous surgeon who was performing his first intestinal anastomosis, in the days of Senn's plates. I suggested that his first knot was not drawn tightly enough, but he was sure it was all right. At necropsy he found that he was wrong; had he operated on animals before operating on a man the result would probably have been different. One cannot do these things by seeing them or reading about them. We all make mistakes enough; let us not add to these, unnecessary ones for want of proper preparation.

American surgery today is in the foremost rank, but let us not be content with that; a famous future can be ours, but it must be achieved by constant work and study. The standard must be raised still higher and surgeons must be trained more thoroughly for their work; graduate schools of surgery, large clinics where men can live and work long enough to acquire some of the art and skill of the master, more operations on the lower animals, both in the medical school and hospital laboratories, and greater observation and practice in the after-treatment of surgical cases, all these must be within the reach of the would-be sur-

geon. Technical skill in the surgeon is important, but of greater importance is surgical judgment. Many a man is, or can become, a skilful operator, but he needs to be something more. In operations on the intestinal tract, often more depends on knowing when to operate and what to do, than in any other part of the body. Of what advantage is it to the patient that a successful excision of the large intestine, for instance, or an anastomosis to side track it be done, if it does not improve his condition, having been performed when it was useless or unnecessary. The man of sound surgical judgment will save more lives and benefit humanity more, even though he be clumsy, than the man who is quick and dexterous but devoid of that essential requirement. The ideal surgeon possesses both qualities, and it should be the aim of every man who claims to be a surgeon, to perfect himself in every side of his art. Much has been written about intestinal surgery, but there are many problems yet unsolved, and it is the trained surgeon who must find the solution.

This subject is a live one which is being carefully studied and worked over. There is still work ahead, for no question that is open to discussion can be considered as settled.

180 Marlboro Street.

CHENOPODIUM IN THE TREATMENT OF UNCINARIASIS

PRELIMINARY REPORT

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AND
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ANCON, C. Z.

In an article on the treatment of uncinariasis with the oil of chenopodium, Levy[1] has reported a number of cases in which he has had excellent results, and has given a detailed account concerning the toxicity of the drug, assuring us of the little danger connected with its administration. His article appeared subsequently to a thorough report of 1,457 cases presented by Schneffner and Vervoort in which results were sought comparatively with other vermifuges, and the following percentages of comparative efficiency were presented: oil of eucalyptus, 38; betanaphthol, 68; thymol, 83; oil of chenopodium, 91.

At the present time, there is perhaps not a field in existence better given for further investigation in lines of hookworm and other parasite therapy than Santo Tomas Hospital. Its location is tropical; its patients (numbering seldom less than 500) are drawn from many nationalities, among which the native poor Panamanians and the West Indian negroes chiefly predominate, and extremely poor sanitary conditions unfavorable to hookworm extermination still exist throughout the interior of the Republic of Panama.

The West Indian negroes mentioned are those poor discharged laborers from the Canal Commission whom Panama still harbors within her boundaries, and many of these, not able to obtain employment, live in the interior of the republic in the most deplorable poverty — shoes, as with most of the Panamanians living in the interior, being a luxury not often possessed by them. Both of these peoples, with few exceptions, when the cause and nature of their maladies and the measures necessary to produce a cure have been fully explained in simple language, will in most instances yield honestly and cooperate with the physician. With the chenopodium treatment it was far easier to accomplish this than with thymol, because of the simpler method of its administration, and the less drastic results following its ingestion. The oil is put up in capsules of 8 minims each, and we have administered two capsules to the dose, including three doses to the treatment, given two hours apart. Each treatment was followed in four hours by 2 ounces of castor oil. In the plan of the treatment laid down and recommended by Dr. Levy in his article, 50 minims of chloroform were added to the castor oil for the purpose of enhancing the efficiency of the vermifuge; but in the form of treatment which we adopted and followed throughout, we purposely omitted this, intending thereby to give the drug under investigation a fairer trial.

In contrast, the accepted routine treatment of uncinariasis with thymol at Ancon and Santo Tomas Hospitals is as follows: At 4 p. m. calomel is given, the supper is restricted to liquids, and at 8 p. m. 2 ounces of magnesium sulphate are administered. The following morning the patient receives 60 grains of thymol in three doses of 20 grains each at the hours of 4, 5 and 6, respectively, and at 9 o'clock 2 ounces of magnesium sulphate, the diet being resumed at noon if the bowels have moved well.

The dosage of both chenopodium and thymol, in the treatments outlined, is that for adults; we have followed Young's rule in the treatment of children. It may be safe to say, however, that 1 drop of the oil of chenopodium may be given for every year of the child's age, and that this dose should be repeated twice, two hours apart, and followed by oil to constitute a treatment as hereinbefore outlined. The oil can well be given to children with sugar.

It must be evident to all who have had experience in the treatment of uncinariasis that such a method of administering a vermifuge, provided it be efficient, is to be preferred. It is attended with much less inconvenience and discomfort to the patient than with thymol, there being no dietetic restrictions and no excessive purging. The matter of dietetic restrictions insisted on by others has been in our experience entirely unnecessary with chenopodium, the oil being given at night merely to facilitate obtaining and examining morning specimens.

The treatment of hookworm disease, and any determination of a removal of infection with either thymol or chenopodium necessarily are expensive from several standpoints: First there is the cost of the drug: Here there is no great variation between the two. The Health Department of the Isthmus pays $2.40 a pound for thymol. Sixty grains constitute one treatment. Levy gives jobbers' prices in the States as from $2.50 to $3 a pound for chenopodium. A treatment consists of 48 minims, but it will be proved later that the average case requires fewer treatments to constitute a cure with chenopodium than with thymol. The other important consideration is the length of time required to effect a cure. In that a great many cases of uncinariasis require several courses of treatment to overcome the infection, it is obvious that the sooner courses of treatment can be repeated, the sooner can the patient be discharged.

1. Levy, R. L.: Oil of Chenopodium in the Treatment of Hookworm Infections, THE JOURNAL A. M. A., Nov. 28, 1914, p. 1946.

With thymol the effects of the purging and the drug on the patient practically prohibit repetition in less than five or six days. With chenopodium we have often repeated treatments at intervals of three days, and we have never seen the prostration and weakness which is often occasioned by thymol.

The oil of chenopodium is not a new drug. Hare states that the oil is distilled from the fruit of the *Chenopodium ambrosioides*, or American worm-seed, and that its anthelmintic properties have long been known in the treatment of ascariasis. Levy has dealt with great detail in the pharmacology and chemistry of the drug, but as far as we are able to ascertain, no active principle has been isolated therefrom. It is claimed for the drug that it acts as a paralysant on the parasite, causing it to loosen its hold on the intestinal mucosa, enabling the purge to sweep the worms from the intestine.

As concerns the toxicology of the drug, Levy has surveyed the literature on the subject and has collected twelve authentic cases of poisoning, nine of which ended fatally and seven received an overdose. One of his conclusions is that "in therapeutic doses it is nontoxic." In the 108 cases in which we have administered this oil thus far, we have never encountered any manifestations of toxicity. Of the twelve cases mentioned by Levy, eight occurred in children under the age of 13. While most of our experience has been with adults, we have thus far definite record of six cases in children of ages ranging from 3 to 14 years, and none of these have ever shown any ill effects from the drug.

Believing in the nontoxicity of the drug, we have not hesitated administering it to all patients regardless of other conditions, with the exceptions of those suffering from hyperpyrexia and acute inflammations of the gastro-intestinal tract. Accordingly, during the course of treatments, we have had some deaths, all of which went to necropsy and, as will be seen, in none of these, despite careful investigation, were there any evidences of chenopodium poisoning being a factor in the cause of death.

Our methods of observation of treatments administered were as follows: The stool specimen having been microscopically examined and found positive for uncinariae, the hemoglobin was taken, and the first chenopodium treatment given, after which the first whole stool obtained following the administration of castor oil was washed and examined and the hookworms counted in order to determine, in a measure, the success of the therapeutic procedures applied. Then for five successive days a stool specimen from the patient was examined microscopically every morning, and at the end of this time the chenopodium treatment was repeated. If during the examination of these morning specimens one of the first was found to be positive, we frequently repeated the treatment before the series of five was completed. And so we continued, repeating the treatment as long as any one of the specimens showed even as much as a single hookworm egg, and also keeping count of the worms expelled after each treatment. Some there were who received in accordance with this, our routine course of therapy, as many as seven and eight such courses of treatment; and some of these patients, needless to say, yielded very reluctantly to further treatment after the fifth or sixth administration of their medication. In some, though probably not more than two or three, the patients absolutely refused more treatment, and their records unfortunately could not be completed. Our requirements for a cure were, that all morning specimens for at least five or six or more successive days must be negative for uncinaria eggs, and then the treatment having been repeated, the whole stool must be negative for hookworms. After this the hemoglobin was again taken and compared with the first reading. We have had occasion to examine the stools of patients thus treated and considered cured by us, as long as two and three months after the prescribed course of treatment had been completed, and found that the stools were still negative for uncinariae. The hemoglobin estimation also showed a distinct rise in these patients from the time of their cure.

In our series of treatments we also included a number of patients treated with thymol, just as an approximate comparison and with no intention of establishing any definite ratio between the two drugs for, as already stated, this feature of percentage efficiency among vermifuges has already been more or less definitely determined. In a few cases we have also followed thymol treatments by chenopodium, and accordingly have also followed chenopodium by thymol treatments, but this being only a preliminary report, our observations thus far have not been extensive in this respect.

To date we have records of treatment in 168 cases of hookworm disease of both the Old and New World varieties. Thus far we have administered oil of chenopodium to 108 patients, and of these, ninety-two received throughout their treatments chenopodium alone, the remainder having been given alternate treatments of chenopodium and thymol or thymol alone.

With the desire to ascertain approximately the efficiency of chenopodium as a vermifuge in uncinariasis, it was necessary to adopt some method of comparison with thymol, the accepted anthelmintic for this condition. We decided that as good an indicator as any would be a comparison of the average number of hookworms expelled in the first whole stool from equal numbers of unselected and previously untreated cases. The cases in which thymol was given and the first whole stool obtained were sixty, and the average number of hookworms expelled was seventy-six. The first sixty cases treated with chenopodium gave an average of ninety-nine hookworms. Among more recent treatments there have been so much better results that the average of ninety-nine in the first sixty chenopodium cases has increased to 131 in ninety cases. In one instance there were expelled 1,379 uncinariae in a first whole stool.

It was impossible at times to complete courses of treatment instituted for various reasons, such as the patient demanding his discharge, intervening death, or inability to obtain the whole stools, often because of the patient's failure to cooperate. The number of cases at the present time, in which we consider our records complete and the patient as cured, total twenty-four in which thymol only was given, and thirty-five for chenopodium. It will be interesting to note the average number of treatments which each drug required to effect a complete cure, according to our standard as stated above. In the twenty-four instances of a cure with thymol, forty-nine courses of the drug were required to obtain the results. In the first twenty-four cures with chenopodium, only thirty

courses were required, and for the total of thirty-five cures, forty-two treatments were needed.

Since beginning this work with uncinariasis, the opinion has grown with us that the oil of chenopodium is a vermifuge which will act more quickly and more efficiently than thymol. The comparison of the number of courses necessary to effect cures with the two drugs, we believe, shows this to be true. Desirous of testing the action of the drug further, we decided to alternate them in the same case. As yet the number of these trials is too few to furnish statistics, or do more than suggest that further investigation will confirm our supposition.

Case 1.—The patient received thymol, after which the first whole stool was negative. Several days later a chenopodium treatment caused the expulsion of seven hookworms in the first whole stool following.

Case 2.—Whole stool after thymol showed twenty-nine hookworms. A week later chenopodium expelled forty-eight hookworms. A second chenopodium treatment gave a negative result.

Case 3.—Thymol whole stool was negative. Chenopodium a few days later expelled eleven hookworms. The next chenopodium treatment was followed by negative whole stool.

Case 4.—Thirteen worms were expelled by chenopodium following a negative result from a thymol treatment.

Case 5.—First thymol result showed seventeen hookworms, after which the third daily stool specimen showed ova. Thymol was repeated with a negative result, after which the fifth morning specimen again showed ova. Thymol was again given with a negative result. Then chenopodium was given; six hookworms were expelled, and five successive morning specimens were negative for ova.

In the many instances in which chenopodium was primarily given, and thymol subsequently administered, the thymol results never exceeded those of the preceding chenopodium treatments.

Most of our patients were admitted to the hospital with conditions other than simply uncinariasis, this infection being discovered through the routine stool examination of all new patients. Some of these patients, dying of the accompanying diseases, gave us the opportunity of observing at necropsy the absolute results of our treatments, and we will cite the following cases in this respect:

Case 6.—The patient had been given three thymol treatments in which the whole stool results were not observed. At this time he was very anemic, and the ova still persisted in the stool. He was then given chenopodium treatment, but the whole first stool was missed. This was followed by five successive negative morning specimens, and the chenopodium treatment was repeated with the result that twenty-five uncinariae were expelled. The hemoglobin was 20 per cent. at the time of beginning the chenopodium treatments. At necropsy the small intestine, especially the duodenum and down near the cecum, were literally filled with hookworms, which were embedded deeply in the mucosa of the valvulae conniventes. All organs were extremely anemic. Nothing else was found to be abnormal save for a chronic nephritis which was not very severe, and a mild bronchopneumonia, probably terminal. The cause of death was attributed to hookworm disease with secondary anemia. The patient died on the day following the last chenopodium treatment.

Case 7.—The patient received two chenopodium treatments with expulsion of but one hookworm. Four morning specimens were negative. The patient died some time after treatment, the cause of death being septic endocarditis, the patient having not received treatment during the time of persistent fever. At necropsy, the intestine was entirely free from hookworms. The septic endocarditis had most probably developed after this treatment had been begun.

Case 8.—The patient was tuberculous. Chenopodium expelled fourteen uncinariae. Five daily stool specimens and the second chenopodium treatment gave a negative result. We had considered him, therefore, cured of uncinariasis. Necropsy, some time later, showed pulmonary tuberculosis as the cause of death. Although the intestine showed two large diverticula and many small ones in the ileum and jejunum (the two large ones being in the jejunum), no uncinariae were found anywhere.

Case 9.—Eighty-seven hookworms were expelled after the first chenopodium treatment, and five successive stools were negative. A second chenopodium treatment expelled two uncinariae. Necropsy revealed, as the cause of death, general septicemia, with ulcers of the leg as a primary focus. Here also the intestinal tract was free from hookworms.

Case 10.—Boy. Hemoglobin was 10 per cent., with no increase during treatment or during stay in hospital. A first thymol treatment expelled twenty-nine uncinariae, and a subsequent chenopodium treatment, forty-eight uncinariae. A second chenopodium treatment was negative. Necropsy showed a complete removal of the parasite and gave the cause of death as congenital syphilis.

Chenopodium has long held a place in the pharmacopeia, being employed chiefly as a vermifuge in ascariasis. In many of our hookworm cases, several other types of intestinal parasites were also present, and our experience has confirmed its efficiency in roundworm infections but absolutely no effect on *Strongyloides intestinalis*, *Trichocephalus dispar* or trichomonads was noted, these parasites often persisting after many treatments. With the *Balantidium coli* the data are too limited to permit conclusions, as this infection is not very common.

That hookworm infections are sometimes very stubborn and resistant to all treatments is illustrated in the following cases:

Case 11.—The patient received thymol and expelled eleven hookworms, but the following specimens contained ova. Chenopodium was then given, but the whole stool was not received; the following specimens contained ova. The third treatment consisted of chenopodium, and gave a negative result. The fourth treatment was also chenopodium and was negative, but stool specimens were still positive. The fifth treatment of chenopodium was negative. The sixth treatment consisted of thymol, and gave also a negative result. The seventh and eighth treatments were with chenopodium, and similarly gave negative results, after which specimens were still positive, and the patient demanded his discharge.

Case 12.—Thymol case. Seven courses of treatment were required before a cure was effected.

Case 13.—Thymol case. Six treatments established a cure.

Case 14.—Hemoglobin was 43 per cent. Uncinariae and ascarides were present in the first specimen. The first treatment with chenopodium expelled 552 uncinariae and eleven roundworms. Positive specimens followed. The second treatment with chenopodium expelled ten uncinariae, and still positive specimens persisted. Four uncinariae were expelled after the third chenopodium treatment (at this time the hemoglobin had risen to 52 per cent.). Five negative specimens followed. The fourth chenopodium treatment gave a negative result. It will be interesting to note that ten days later, uncinaria ova again appeared in the stool, and a fifth chenopodium treatment was given, causing the expulsion of 120 hookworms and one roundworm. The sixth treatment consisted of thymol, and a negative result followed. The six successive morning specimens were negative. (Thymol was here introduced because our supply of chenopodium became exhausted.) The hemoglobin had risen to 85 per cent. Two stool specimens examined five and six weeks later were still negative.

Case 15.—Hemoglobin was 18 per cent. The first treatment of chenopodium expelled 1,379 hookworms. The second treat-

ment of chenopodium expelled 1,304 hookworms. The result of the third chenopodium treatment, unfortunately, was not received. The fourth treatment, consisting of thymol, expelled thirty-five uncinariae. The fifth treatment of thymol gave a negative result. (Hemoglobin at this time was 27 per cent.) The sixth treatment of thymol expelled two uncinariae. The seventh treatment of thymol expelled two uncinariae. After this there were six negative specimens, followed by a negative chenopodium treatment. (Hemoglobin now had risen to 61 per cent., and the patient's entire appearance was wonderfully improved.) This total of 2,722 hookworms in one patient is the heaviest infection we have ever encountered, with the possible exception of the case cited above which we examined at necropsy.

Such resistant cases, however, are rather the exception than the rule, and in many instances a rapid and permanent cure was obtained. The following cases illustrate some of the gratifying results which attend the successful treatment of hookworm disease with chenopodium:

CASES 16-18.—The patients were a mother, aged 33, with two children, aged 3 and 6, respectively. The hemoglobin was: mother, 32 per cent.; younger child, 50 per cent.; older child, 48 per cent. The stools of all were positive for uncinaria ova, and all received chenopodium treatment, after which the mother expelled 201 hookworms and one roundworm; the younger child expelled sixty hookworms, and the older child expelled twenty-two hookworms. A second treatment with chenopodium gave the following results: The mother expelled twenty-five uncinariae; the younger child expelled ten uncinariae, and the older child expelled nineteen uncinariae. A third chenopodium treatment gave negative results in all three cases. The hemoglobin tests at this time were as follows: the mother, 55 per cent.; the younger child, 80 per cent.; the older child, 68 per cent. Six weeks later, two separate stool specimens were examined from each, and all of these were negative. The hemoglobin tests at this time were as follows: the mother, 74 per cent.; the younger child, 102 per cent.; the older child, 100 per cent.

In all of our hemoglobin tests, the same instrument (a Dare hemoglobinometer) was used.

SUMMARY

1. The method of administration of chenopodium is simple, and is attended with less inconvenience and discomfort to the patient than with thymol. This would give the drug an important place in the field work in uncinariasis.

2. Chenopodium can be given at shorter intervals than can thymol, and a cure can thereby be more quickly established, which gives it a greater economic value.

3. Chenopodium is nontoxic in therapeutic doses.

4. Chenopodium is a more efficient vermifuge than thymol in the treatment of uncinariasis.

Equality Not Biological.—"All men are born free and equal," it is asserted, but such equality is political only. It can not be biological. In every race are certain strains having capacities not attainable by the mass. There should be equality of start, equality before the law, but there will always be differences of attainment. The gifts of potentiality, unit characters of the germ-plasm, are not shared by all people of the same race. The average status of one may be below that of another, and the highest possibilities of one type may be greater than that of another. In general, the highest range of possibilities in every field has been reached by the "blonde races" of Europe. Groups of less individual or of less aggregate achievement may properly be regarded as "lower."—David Starr Jordan in *Popular Science Monthly.*

CREATIN AND CREATININ EXCRETION DURING THE PUERPERIUM AND THEIR RELATION TO THE INVOLUTION OF THE UTERUS *

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The retrogressive changes which follow pregnancy restore the mother's body approximately to the condition which existed before conception took place. The restorative process, as it affects the uterus, includes an autolytic phenomenon known as involution, which rapidly reduces the weight of the organ from about a kilogram to 50 or 60 gm. Histologically, the decrease in mass depends on the atrophy of the muscle cells forming the walls of the uterus, and the metabolic end-products which thus arise are eliminated in the urine.

Since it is generally admitted that following labor catabolic changes predominate in the metabolism of the uterine muscle cells, it seemed reasonable to suppose that this fact explained the presence of creatin and of a relatively large amount of creatinin in the urine of puerperal women. Indeed, the anatomic and physiologic facts regarding the involution of the uterus accorded so satisfactorily with the urine findings that for a long time no one challenged the hypothesis which held that the one was the cause of the other. Lately, however, Mellanby[1] has questioned this doctrine and declares as his opinion that activity of the breasts is fundamentally concerned with the excretion of creatin. It was this uncertainty regarding the part played by the involution process which led us to accept the opportunity to study several patients whose metabolism promised to throw additional light on the problem.

Our conclusions are based on the observations of four types of cases, namely, (1) a normal labor; (2) a conservative cesarean section at the end of normal pregnancy; (3) a conservative cesarean section in a case of pre-eclamptic toxemia, and (4) two cases of cesarean section with removal of the uterus. A material so varied has enabled us to learn in the first place that the creatin and creatinin metabolism is practically identical after normal labor and after cesarean section, provided the uterus is not removed, and the pregnancy has not been complicated by a toxemia. And, in the second place, we have been able to compare the excretion of these substances in cases in which the uterus was undergoing involution with others in which the uterus had been extirpated.

With two exceptions all the patients were the subjects of metabolic observations during pregnancy, but the results to be reported in this communication relate exclusively to the puerperium. The observations were continued without interruption for a period of two weeks or more after the delivery. The diet was creatinin and creatin-free. The urine was obtained by catheterization as long as there was risk of contamination from the vaginal discharge. It was collected over twenty-four-hour periods, was preserved with

* From the Woman's Clinic, University of California Hospital.
* Read before the Section on Pathology and Physiology at the Sixty-Sixth Annual Session of the American Medical Association San Francisco, June, 1915.

1. Mellanby: The Metabolism of Lactating Women, Proc. Royal Soc., London, Series B, 1913, lxxxvi, 88.

chloroform and analyzed daily. All determinations were made in duplicate. The total nitrogen was estimated by the Kjeldahl method; the creatinin and creatin by the Folin method.

The results of the Kjeldahl determinations indicate a notably smaller output of nitrogen in case hysterectomy was performed. This phenomenon has been previously observed by Slemons,[2] who demonstrated that during acute puerperal involution the average daily nitrogen excretion attributable to uterine autolysis varied between 2 and 3 gm.

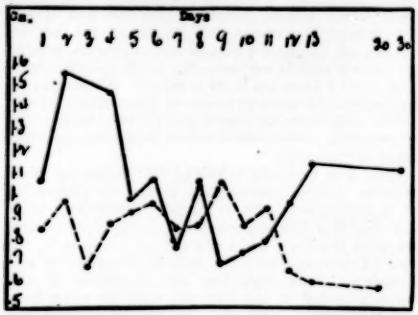

Chart 1.—Contrasting the preformed creatinin of the urine after conservative cesarean section and after the Porro operation. Solid line represents the excretion in the case in which the uterus was not removed; broken line that of the case in which it was removed.

In its behavior the creatinin elimination resembles that of total nitrogen; larger amounts are excreted in case the uterus is undergoing involution. In Chart 1 the creatinin excretion of two patients is illustrated. In both cesarean section had been performed, but in one the uterus was removed and in the other not. During the first thirteen days of the puerperium the mean average daily output of creatinin was found to be 1.09 gm., in two cases in which the uterus was undergoing involution, and .897 in two cases in which the uterus had been removed. Therefore, during this period it appears that approximately 2 gm. less of creatinin is excreted by a puerperal patient, if hysterectomy has been performed. Later in the puerperium the excretion of creatinin has always been lower than during the first two weeks.

An increase in the excretion of creatinin during the puerperium has frequently been demonstrated and has generally been attributed to the involution process, but Heynemann[3] thought additional causes for the phenomenon existed in the muscular effort incident to childbirth and in the restricted diet generally employed thereafter. It would seem, however, that these factors are not essential, for we have observed the phenomenon though the patient was delivered by operation, before the onset of labor, and though she received from the third postoperative day a diet the caloric value of which was quite adequate for the individual.

After bleeding animals, Patterson[4] found the creatinin excretion was increased. If this factor played a rôle in our cases we are unable to estimate it, but in spite of such an influence a lower excretion was invariably found in case the uterus was removed. We are convinced, therefore, that an increased output of creatinin during the period of convalescence following cesarean section without hysterectomy, and also during the normal puerperium, is largely, if not entirely, due to the involution of the uterus.

Soon after Folin[5] devised a satisfactory clinical method for the estimation of creatinin and creatin, the presence of the latter in the urine was sought in a great many different pathologic conditions. Not infrequently during the course of disease creatin was found, but in health it was learned that the urine contained no creatin, or amounts too small for measurement. In the case of women during the period of convalescence from childbirth, however—a borderland between sickness and health—creatin was demonstrated to be a regular constituent of the urine. This observation made in 1908 by Schaffer[6] has been amply verified; but the hypothesis he offered, which attributed the creatinuria to the involution of the uterus as we have said, has been called into question. In these circumstances it is instructive to compare the excretion of creatin in four cases of cesarean section, in two of which the uterus was removed and consequently the involution of this organ could play no part in the metabolism of creatin.

In all the four cases the urine contained a large amount of creatin during the early part of the puerperium. For the first thirteen days of this period the average daily excretion was .207 gm. and .167 gm., respectively, in the two cases in which the uterus was in situ; the corresponding figures for the cases of hysterectomy were .285 and .329 gm. Thus it appears that the removal of the uterus did not modify the creatinuria. As a matter of fact, in the cases in which the involution of the uterus was in progress, smaller

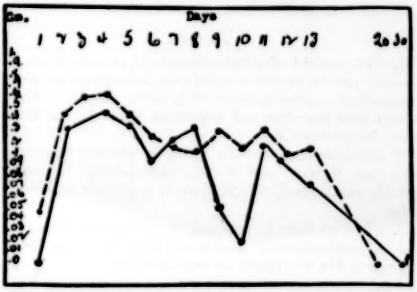

Chart 2.—Contrasting the creatin of the urine after conservative cesarean section and after the Porro operation. Solid line represents the excretion in the case in which the uterus was not removed; broken line that of the case in which it was removed.

amounts of creatin were present than in the cases in which the organ was removed irrespective of the surgical procedure.

The curve representing the daily excretion has generally been of the plateau type. On the day following

2. Slemons: The Involution of the Uterus and Its Effect upon the Nitrogen Output of the Urine, Bull. Johns Hopkins Hosp., 1914, xxv, 195.

3. Heynemann: Zur Frage des Leberinsuffizienz und des Kreatinstoffwechsels während der Schwangerschaft und bei den Schwangerschaftstoxikosen, Ztschr. f. Geburtsh. u. Gynäk., 1912, lxii, 110.

4. Patterson: A Study of the Influence of External Hemorrhage on the Partition of Urinary Nitrogen, Biochem. Bull., 1913, ii, 535.

5. Folin: Beitrag zur Chemie des Kreatinins und Kreatins im Harne, Ztschr. f. physiol. Chem., 1904, xli, 223; The Chemistry and Biochemistry of Kreatin and Kreatinin, Festschrift für O. Hammarsten III, Upsala, 1906.

6. Schaffer: The Excretion of Creatinin and Creatin in Health and Disease, Am. Jour. Physiol., 1908, xxii, 1.

the operative delivery there begins a notable rise in the output, the maximum is reached about the fourth day, and except for an occasional irregular drop the curve remains high for approximately two weeks. The urine was free of creatin in the cases of hysterectomy on the twelfth and twentieth days, respectively. In one of the cases in which the uterus was not removed, creatin was present on the fifteenth day, when observations were interrupted, but was not found subsequently from the thirtieth to the thirty-fifth days. In the other case of a conservative cesarean convalescent from a toxemia of pregnancy, creatin was still present on the twenty-third day postpartum (.057 gm.). For the first thirteen days of the puerperium the total excretion of creatin in the four cases was as follows: The uterus in situ and involuting, 2.17 and 2.48 gm.; the cases in which the uterus was removed, 3.71 and 4.27 gm. Such results clearly indicate that the creatinuria which always occurs during the period following childbirth is not dependent on the involution of the uterus.

The facts learned regarding the excretion of creatinin and creatin in these patients have a significant bearing on the question in general of the metabolism of these substances. On the one hand, the quantity of creatinin eliminated depends on the involution of the uterus; on the other hand, there is no relation between this process and the elimination of creatin. And it is also true in these cases that the excretion of the one substance bears no direct or reciprocal relation to the excretion of the other. For these reasons it appears that at least during the puerperium the metabolism of the two substances is independent—a fact which accords with the recently announced views of Folin[7] and of Klercker.[8]

The explanation for the creatinuria of the puerperium is doubtful. Our observations not only make untenable the involution hypothesis of Schaffer and of Murlin,[9] but they also fail to support Mellanby's hypothesis attributing the phenomenon to a failure of excretion of the creatin through the milk. Our cases showed marked creatinuria even though the breasts were functioning normally.

To recapitulate: From observations made on four cases in which cesarean section was performed, in two instances without removal of the uterus, and in two instances with hysterectomy, the following conclusions may be drawn.

1. A lower total nitrogen output is observed in case hysterectomy is performed, and the higher output of nitrogen observed when the uterus is left in situ is explained by the involution process.

2. A lower creatinin output occurs in case of hysterectomy and at least 2 gm. of this substance excreted during the puerperium arise from the involution of the uterus.

3. Creatin in large amounts regularly appears in the urine following childbirth. The creatinuria is independent of the involution of the uterus, and it is also independent of the creatinin metabolism.

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7. Folin and Denis: An Interpretation of Creatin and Creatinin in Relation to Animal Metabolism, Jour. Biol. Chem., 1914, xvii, 493.
8. Klercker: Beitrag zur Kenntnis des Kreatins und Kreatinins im Stoffwechsel des Menschen, Biochem. Ztschr., 1907, iii, 45; Ueber Ausscheidung von Kreatin und Kreatinin in fieberhaften Erkrankungen, Ztschr. f. klin. Med., 1909, lxviii, 22.
9. Murlin: Protein Metabolism of Normal Pregnancy, Surg., Gynec. and Obst., 1913, xvi, 43. Murlin and Bailey: Further Observations on the Protein Metabolism of Normal Pregnancy, Arch. Int. Med., September, 1913, p. 288.

ELEMENTARY BUT VITAL FACTORS IN THE EFFICIENCY OF SMALLER HOSPITALS *

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To add to my personal knowledge of the hospital situation, I sent a rather exhaustive questionnaire to the leading medical men of one of our western states, hereinafter known as "Mid West." The response was most generous. No effort is made to classify the answers, but it is a fair assumption that they represent the general situation, especially in hospitals of from forty to 150 or 200 beds, and they are conclusive evidence that the medical profession is not satisfied with existing conditions, and is fully alive to the pressing need for improvement. Not only is the medical profession fully and painfully cognizant of the many shortcomings in hospital management and service, but the public, already skeptical in regard to the medical profession, is rapidly learning that many hospitals are not as efficient as they might be, and that a palatial operating room does not always mean careful diagnoses, good beds, well-trained nurses, and faithful bedside attention. The public is learning to discriminate between the good and the indifferent. It is only by putting the house in order that the latter all too common type of hospital can escape severe but well-merited criticism. The hospitals that are first to read and heed the signs of the times will spare themselves the rude but belated and unpleasant awakening to the fact that very desirable and financially able patients are seeking better managed and more efficient institutions.

I am, further, convinced that the present efficiency of many of these open hospitals can be doubled, increasing their annual budget, and with much more satisfactory results in every department.

The great majority of the hospitals in "Mid West" are "open." Every physician or surgeon bringing a patient is admitted without question. One of these hospitals has fifty beds and 100 members on the staff. My informant seriously assured me that this was a "closed" hospital, although he was unable to mention the name of a single practitioner of medicine within a reasonable distance who is not freely and probably gladly admitted. He compromised by insisting that the hospital is "not wide open."

THE ATTENDING STAFF

In not more than 5 per cent. of the hospitals in "Mid West" is there anything but a nominal staff; usually there is no staff. When a so-called staff really exists, it "does not meet at all," or it "meets once or twice a year," or "once in a decade," or it "meets when a fight is on," or "everything is hit or miss." Compare this warping, withering, dwarfing, disintegrating situation with the stimulating and invigorating practice in vogue in the oldest and one of the most progressive hospitals in America, located in a great metropolitan city. In this hospital the attending staff meets one afternoon each week, to study and discuss interesting cases; it has one business meeting each month, held just before the monthly meeting of the hospital management; and once each quarter the staff

* Read before the Section on Hospitals at the Sixty-Sixth Annual Session of the American Medical Association, San Francisco, June, 1915.

and the management have a conjoint business meeting with a dinner.

The attending staff usually sets the pace for the hospital. With an active, progressive, united and cooperating staff, the hospital must be good, because such a staff will make it good. With a staff the reverse of the foregoing, the hospital cannot be good, unless the hospital has an unusually well-organized and efficient nursing staff, with a few unusually strong men on the attending staff.

If there be one special characteristic of the usual attending staff, it is a woful lack of harmonious cooperation, and a great surplus of petty jealousy and bickering. It may be conceded, I think, that the management of a private hospital has the right to select the members of its staff, has the right to say who may enter, and who must remain away. If the hospital management would stop at this point, much would be gained. But the management of some hospitals assumes the right to appoint staff committees or to insist that certain men constitute all or a part of the executive committee of the staff. Unfortunately, in many instances, the management of the hospital is not a good judge of professional efficiency; the wily self-seeking politician, "cowering low with blandishment," receives a much more attentive and willing ear than patient merit that frankly speaks the truth. As a result, incompetent men are too often appointed on such committees. The employees of a great industrial concern have the right to organize as they see proper. How a hospital management can presume to inflict a committee on men whom it invites into the house, to divide with it a great responsibility, or how men can accept such a situation, is beyond comprehension. A staff dominated by an incompetent committee, appointed by the management, is a hopelessly disorganized staff, and not only will the hospital suffer, but also the staff members individually. A staff must be left free to organize as it sees fit, and to select its own officers and representatives. I have seen several attending staffs sadly disorganized because the management insisted on selecting or appointing an unfit committee, although in each instance there was in the staff a group of splendid progressive men, several of whom had seen high-grade intern service, who were in every way deserving of the confidence of their fellow members and of consideration by the management. It is a mistake for the hospital management to appoint even the best men on a committee, as such men will be far more efficient if selected by their fellows.

The right to seek advice and council when and where it will cannot be denied the hospital management. It may invite one man or a group of men to act as its privy council, and in this choice consult only its own pleasure. This is quite a different thing from appointing a staff committee, to dominate the staff, to represent the staff, or to misrepresent the staff, as the committee sees fit. A staff so dominated or controlled can never raise itself to the high level outlined in this paper. The date of its birth and demise are the same, so far as serving a useful purpose is concerned.

What is the chief function of a hospital staff? The answer is very simple. The chief function of a hospital is to educate itself, individually and collectively, to better discharge the duties and obligations incurred by its members in accepting a staff appointment. To serve its purpose, a staff must hold frequent meetings, at which not only hospital problems, but more especially medical problems must be discussed, interesting cases must be presented for consideration, pathologic specimens must be studied, that all may be benefited. As failures are often even more instructive than successes, the former also should be reported for free discussion. It is especially important that the causes of "accidents" be thoroughly investigated and the responsibility fixed. Staff members should make frequent visits to medical centers, and every member making such a visit should bring back with him, for the benefit of his fellows, whatever seems to him worthy of presentation. The operating room should be open to staff members at all times, and all operations should be bulletined. As many members as possible should be invited to study interesting cases in the wards. Necropsies should be bulletined. In this way the experience of each staff member will become very considerable. It might be well for the staff to organize itself into a current medical literature club, to better keep abreast of the times, and also to have its members present synthetic reviews on this or that topic, thus taking an invoice of knowledge in stock. All staff members ought to take an active part in medical society work. With the improvement of the staff individually and collectively as the prime motive in staff organization, increased staff and hospital efficiency, and better service to the patient will be sure to come. All of this is very elementary and self-evident, yet I failed to find one open hospital in "Mid West" in which the staff either realized its opportunities or profited by them, along the lines suggested. Failure to recognize this important function, more than anything else, is responsible for the very general spirit of unrest and dissatisfaction at present existing in the hospital world. Its recognition and exercise must be the first step in the solution of many hospital problems.

With the right kind of attending staff, requests addressed to the hospital management will always be reasonable, in the interests of all concerned, and will receive respectful consideration. To keep the men pushing all at the same time, and in the same direction, will surely bring better things.

THE TRAINING SCHOOL AND THE NURSING STAFF

It need not be said that the members of the attending staff are under serious obligations to the training school, and that it is their duty to cooperate with the head of this department to give the young women in training a proper course of instruction, both theoretical and practical. Such a course must include the necessary laboratory work in selected medicochemical subjects, and in practical becteriology. A nurse cannot grasp the important facts in infection, or understand the all-important rôle of bacteria in surgical work, unless she knows something of bacteriology, and her knowledge must be practical as well as theoretical. Too often the obligation as instructors of nurses rests very lightly on staff members, who do not appreciate the responsibility they assume when they accept the invitation to teach.

The object of the training school is, or should be, primarily, to fit young women for the very responsible duty of properly caring for sick people. Judging from the practice in vogue in some hospitals, the management considers the training school an effective means to reduce the hospital expenses, or even a source of revenue. The management is ever ready to assign a pupil nurse to a special case, charging the patient for this service from $15 to $20 per week. I have

known girls still on "probation," and not infrequently nurses in the third or fourth month of training, to be assigned to special cases. To pay a nurse $6 or $8 per month, and have her earn $20 per week, seems a not unprofitable arrangement, but in reality is short-sighted and ruinous. Such service cannot be profitable. The patient pays for and has a right to expect skilled service. It is unfair to the pupil nurses, because special duty often lays on their shoulders responsibilities for which their youth, lack of training, and inexperience entirely unfit them. It is unfair to the doctor because he has a right to assume that his patient, while in the hospital, is under trained and skilful eyes, not always the case in some hospitals. In fact, the question is often forced, "Would the patient not be much safer in his own home, in charge of a selected graduate nurse?" Some training schools expect members of the attending staff constantly to excuse and cover the shortcomings of untrained inexperienced girls; one is expected to become a party to a system which is as dangerous to the patient as it is unfair to the nurse, and which in the end is sure to be disastrous to the reputation of the hospital.

Young nurses ought to be under the direct, Argus-eyed supervision of older nurses, and ought to be in training at least eighteen months before they are assigned to special duty, even in mild cases. They ought to have completed two years of their course in training before they are assigned to special duty in serious cases. The head of the nursing staff ought not to assign pupil nurses to special duty at all, if by so doing the nursing staff is depleted, and the nurses remaining "on general" are overworked and unable to care properly for their patients. This practice is exceedingly bad even from a business standpoint. One patient with a "special" may leave the hospital fairly well satisfied, but a much larger number of patients "on general" leave the hospital feeling that they have not received the attention to which they were entitled. If the head of the nursing staff cannot provide special pupil nurses without overworking the nurses "on general," it is a far better policy to invite graduate nurses into the house for special duty. For obvious reasons a few mercenary hospitals insist that all special nursing in the house shall be done by pupil nurses. Some hospitals even assign a pupil nurse as a companion to a patient able to pay $20 per week. To be an agreeable companion to a "difficult" patient may be an accomplishment of some value, but of such experience a nurse has quite enough, without wasting time that should be devoted to acquiring real useful information. Besides, the nurse is not assigned to this post for her benefit, or for the benefit of the patient, but for $20 per week. Some hospitals assign entirely too many patients to one nurse, as many as six or seven or more patients in private rooms in charge of one nurse being not uncommon. But even with this great pressure on the nurses "on general," there is always one more pupil nurse for special duty, a most short-sighted policy.

Absolutely essential to good work by the nursing staff is management and discipline. I have said that the one special characteristic of the usual attending staff is a woful lack of harmonious cooperation. In a like manner the chief characteristic of many nursing staffs is a woful lack of efficient organization. The nursing staff must have a single, efficient, responsible and fearless head. This head must admit trainers, reject them if unfit; she must have the power to dismiss any nurse in the hospital. Head nurses on the floors of the wards must be just as completely under her authority as the youngest "trainer." In some hospitals, it occasionally happens that head nurses on the floors or in the wards, in length of service or in age, rank the head of the nursing staff, and hence do not take kindly to suggestions or advice. Sometimes these head nurses are not responsible to the head of the nursing staff, but to the same authority to which the head of the nursing staff owes her appointment. I must speak plainly on this all-important point. In community hospitals it very often happens that the head nurses on the floors or in the wards are members of the community and have occupied their positions for years. A younger member of the community, or an efficient lay nurse, is made head of the training school, or head of the nursing staff. This arrangement is entirely inconsistent with high-grade work, as the head of the nursing staff never has that authoritative control so necessary to efficient service. Far better to retire the noble well-intentioned women that have long since earned their crown, and put in their places well-trained, tactful and capable young women, graduate nurses if possible; but far better than the veterans would be the picked members of the third year class of "trainers." To be appointed head nurse on the floor or in a ward would be a much sought-after distinction, and such head nurses would respect and carry out the wishes and ideals of the head of the nursing staff.

If a community has one member competent to act as head of the nursing staff, that member must be put in control, in complete control, of all the departments of the nursing service; she must have the authority to dismiss any nurse regardless of age, position, length of service, or date of affiliation. If a community hospital is unfortunate in not having one such competent member, one must be developed or secured in some way. A thoroughly competent head of the nursing staff will get along in some way, and with great credit to herself and to the hospital, if given a free hand, even without very active cooperation on the part of the attending staff. An inefficient head of the nursing staff makes high-grade service impossible.

With a good attending staff, and with a competent, unfettered head of the nursing staff, there remains but little to add; all else will follow, and the work of the hospital will be high grade.

I wish briefly to refer to the practice in vogue in many of the medium-sized open hospitals: that of having every nurse graduating from the training school serve a short period at the instrument table. Smooth operating room work is not possible with such service. Worse still is the practice which one sometimes sees of having an older nurse, during the operation, act as instructor to the younger nurse at the instrument table. Nothing so loudly and so unfavorably advertises the shortcomings of the operating room service as this thoroughly amateur practice. I should very much prefer the untried nurse, green as she is, than the combination of teacher and pupil at the instrument table, a new nurse being introduced just as soon as the one becomes somewhat proficient. The impossibility of making every graduate an operating room nurse has long been recognized, and the best interests of the patient and of the hospital demand that the attempt to do so be discontinued. Work at the instrument table, as head nurse on the floor, or in a ward,

must not be a part of the nurses' curriculum, but a distinction reserved for those especially capable.

AN EFFICIENCY EXPERT

There is no place where an efficiency expert can be more valuable than in the average open hospital. An expert of this kind ought to be employed for short periods, and as often as may be necessary. A report ought freely to criticize the hospital management in all its details, from the dean of the attending staff and the head of the nursing staff, to the orderly in the wards. Every one at all familiar with the ordinary hospital knows how much time is wasted by members of the attending staff and by nurses, and this needless waste of time is not confined to any particular department. It is found all through the house, from the minute the patient enters, until the nurse, with a "bon voyage," passes her into a departing taxi: the great distance nurses travel — travel is the word — to get a drink of water for a patient, or to journey to the chart room to fill in the records, the time that is lost in serving meals, the hours that are lost by the members of the attending staff in waiting for dressings, or because the operating room is not in readiness. An efficiency expert would see many time-saving opportunities that entirely escape notice, not only by those who have been long in the service, but also by the more or less critical causal visitor. In fact, those long in a service are the very last to see the weak points of such a service; they have become a part of the system, and the system a part of them, and too often they are both deaf and blind to its imperfection. The efficiency expert would note also the character of the bedside attention, whether prompt, gentle, tactful, and skilful, or whether dilatory, rough, irritating and crude.

CONCLUSION

A high-grade hospital must have a conscientious, progressive, united and cooperating attending staff, integrated to educate and improve itself, and to discharge its duty alike to patients and to nurses in training.

It must have a nursing staff under the guidance and control of a single, efficient, capable and authoritative head.

It must have a general management which, hard pressed though it may be by financial considerations, remains ever sensitive and responsive to the best interests of its patients.

In such a hospital, responsibility can always be fixed, untrained and poorly supervised girls are not assigned to special cases, the number of patients under the care of one nurse "on general" never exceeds a certain fixed minimum, there is not an unending chain of inexperienced girls at the instrument table, and an efficiency expert is rarely needed. This hospital will fulfil its high mission as an educator of the profession and the community in which it is located.

ABSTRACT OF DISCUSSION

Dr. I. D. Webster, San Diego, Calif.: I am new at the hospital business. It has fallen in my lot to have charge of the San Diego County Hospital. We had a county physician in that county who did not agree with the county medical society or any of its fellows, and the hospital was closed to the medical profession of the community. The county medical society took the matter up and through the board of supervisors I was appointed county physician. I immediately called on the county medical society to furnish the visiting staff. As far as I know the very close relationship that we have established between the county hospital and the county medical society is perhaps somewhat unique. I asked the county medical society to appoint a so-called hospital committee, of which they made me a permanent member, with two other members from the county medical society, and it rests with this hospital committee to choose the visiting staff at the hospital. We had about forty volunteers seeking to get on the staff, and the present situation is that there are a great many who would like to be on the staff to whom we cannot give places. We have four general surgeons, two gynecologists, one orthopedic surgeon; one man who does nothing but pathology and has charge of the laboratory, one on nose and throat and one man who does nothing but the eye. There is a three months' service for each individual through the year and I believe there is some dissatisfaction at that. We are trying to figure out some way to make their services continuous through the year. In regard to the training school, it was a two years' school and the graduates were not eligible for registration. We changed it to a three year course and we were told by the registrar of nurses that our school made the greatest progress of any school in the state. It is about two years since we made this change.

Dr. William H. Walsh, Philadelphia: I am forcibly opposed to nurses giving anesthetics, for I consider the administration of an anesthetic a very important function of the practice of medicine, and under this assumption, from both a professional and a legal standpoint, it would seem perfectly logical to assume that a nurse has no more right to give an anesthetic than she has to open the abdomen. While it is becoming quite common to find that almost any nurse considers herself a competent anesthetist, it is a well-known fact that very few nurses ever become competent in that highly specialized work, and then only after the most painstaking instruction and long and varied experience—experience that is necessarily acquired at the expense of the patients. The examination of a patient before the administration of an anesthetic is a vital part of the duties of the one who gives the anesthetic, and it is quite beyond my comprehension to understand how a nurse can perform this part of her duties with the limited amount of medical knowledge at her command. Finally, the administration of an anesthetic is the function of a physician, and I believe that if the question were ever brought before the higher courts it would be definitely decided that the administration of these drugs was in fact practicing medicine.

With regard to the point emphasized by Dr. Littig concerning the selection of the officers and the committees of the hospital staff, it is a question in my mind whether it is not sometimes better for the board of managers to pick out certain live, wide-awake, progressive members of the staff and make them the officers thereof rather than permit the staff to go on year after year electing the same old reactionary members as their officers, without the courage even to propose others for fear of offending the overlords. This evil tendency forms what has been called by Dr. J. Chalmers DaCosta the "system." It means that certain of the older members of the staff improperly and unjustly acquire sufficient influence and power to further their own selfish interests at the expense of the hospital and public welfare. Under such domination, even a good hospital superintendent is often thwarted in his attempts to do what he knows is for the best interests of the hospital, and in spite of the protests of the regularly appointed authority, these men get more than they deserve. Their opinions on vital questions are often accepted, and they become highly indignant at the attempt of the hospital administrator to suppress the abuses that they foster. With such a staff in full sway the abuses accumulate with great rapidity and neglect is tolerated and excused in those who belong to the "system," but for others the best efforts and most brilliant accomplishments are censured. New appointments to the staff are handled much as is the common garden variety of ward politics, the question of fitness being of little importance, personal reasons being the deciding

factor. Again, in the words of Dr. DaCosta, "On one side we see the suffering poor; on the other the foul, loathsome rule of the 'system.' Everything is passed on to the men higher up. If I had my way I'd strike that thrice accursed 'system' dead." I should be pleased to assist Dr. DaCosta when he gets ready to strike. On general principles it would be the best plan to formulate a rule in every hospital that staff officers shall not hold office longer than a period of two or three years, and by this procedure it might be possible to break up the "system."

With regard to the question of continuous service, which has been so ably handled by Dr. Littig, I think it is generally conceded by all close observers of hospital work that both from the standpoint of the medical treatment of the patient and the administration of the hospital, it is a far better plan to have continuous service in preference to any other arrangement. The first consideration in any hospital should be the proper and efficient care of the patients treated therein, and there can be no sound argument against the proposition that the patient is better treated if one physician or surgeon attends him throughout his stay in the hospital. This fact is particularly applicable to the orthopedic service of a hospital, it being particularly desirable that the man who operates in such a case should not only supervise the after-treatment, but should prescribe the proper brace, approve of its adjustment and indicate the changes necessary as the child grows. When the individual patient treated in the hospital becomes the most important consideration in that institution, continuous service will be adopted in all cases.

DR. L. W. LITTIG, Davenport, Iowa: I wish to say that is what we hope to accomplish, to have some of these somnolent gentlemen retire. A staff that does not meet for six years is moribund; it is better to have its inactive leaders retire and more progressive men elected to their position. The question of anesthesia does not trouble us much in the Middle West. We have good anesthetists, usually young practitioners that make a specialty of anesthesia, and really do very well. We have but few resident physicians, probably in not more than six hospitals, and in two of these hospitals the anesthetic is administered by students, under the direct supervision of an expert anesthetist. We never have nurses give anesthetics, although the fact has been demonstrated that nurses do make splendid anesthetists. I do not think it is essential that every nurse graduating from a hospital should serve a course at the instrument table. After graduating, nurses have very little work of this kind to do unless they take up hospital work, when an additional course in training should be taken. It is certainly dangerous practice to have every nurse that graduates serve a short term at the instrument table. This is not done in any of the large clinics. The average nurse can pick up all she needs to know by careful observation as assistant to the first operating room nurse.

Tuberculous Metatasis.—It is a sound assumption, that general metastasis in its worst form of tuberculous meningitis is an accurate index of the tendency of any procedure, whether surgical or therapeutic, to mobilize tubercle bacilli infesting tuberculous lesions in various parts of the body. Again and again it happens that in mobilization of tuberculous joints, after necessarily imperfect surgical operations on tuberculous joints or bones or mucous membranes (rectum), or in lymphatic glands, metastasis has been followed by fatal tuberculous meningitis. In these operations, which frequently involve scraping and other crude methods which inevitably open up afferent venous and lymphatic channels by which material elements, such as tubercle bacilli, may be carried into near and distant parts by these channels, tubercle bacilli find their way into the general circulation, and, if in sufficient numbers, may lead to tuberculous meningitis. In some cases, the tuberculous meningitis may be independent of this local injury of tuberculous tissue, but in many cases the tuberculous meningitis is the direct effect of the damage to the tissues around the tuberculous focus.—W. Camac Wilkinson, M.D., *Practitioner*, October, 1915.

THE BLIND DENTAL ABSCESS*

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At the University of Minnesota Hospital, in an effort to correlate oral sepsis with systemic lesions, particularly in patients exhibiting rheumatoid conditions, special inspection of mouths was made for pyorrhea, gingivitis, caries, and by means of the Roentgen ray, for apical abscesses. We were struck by the frequency of apical abscesses in these cases. Routine work was extended to all patients in the hospital in the medical service. Further search was made for apical abscesses by studying the roentgenograms of the mouth in a medical Roentgen-ray laboratory, the purposes of the roentgenograms in many instances being remote from that of ours. The findings are as startling as they are of significance. A little over 68 per cent. of all artificially devitalized teeth were found with apical abscesses, and the total number of abscesses, on 1,350 dead teeth, including those found on pulpless teeth due to caries or accident or to proximal fillings was 83 per cent. (Tables 1 and 2).

TABLE 1.—DENTAL ABSCESSES FOUND IN FIVE HUNDRED CASES

Number of cases	Number of dead teeth	Number of dead teeth with root canal fillings
500	1,350	976
Number of these teeth abscessed	**Nmber of abscesses on pulpless teeth due to caries or accident**	**Total number of abscesses**
669, 67.5%	439, 32.62%	1,108, 83.42%

TABLE 2.—DENTAL ABSCESSES FOUND IN EIGHTY CHARITY AND THIRTY-SEVEN PRIVATE PATIENTS*

CHARITY PATIENTS

Number of cases	Number of dead teeth	Number of dead teeth with root canal fillings
80	241	111
Number of these teeth abscessed	**Number of abscesses on pulpless teeth due to caries or accident**	**Total number of abscesses**
82, 73.87%	130, 53.5%	212, 88%

PRIVATE PATIENTS

Number of cases	Number of dead teeth	Number of dead teeth with root canal fillings
37	131	102
Number of these teeth abscessed	**Number of abscesses on pulpless teeth due to caries or accident**	**Total number of abscesses**
76, 74.7%	29, 22%	105, 80%

* In 117 cases divided into poor and rich patients little difference is shown in apical infections.

* From the Department of Medicine of the University of Minnesota.
* Read before the American Association of Immunologists, Washington, D. C., May 10, 1915.

One hundred and fifty-nine of these cases with apical abscesses have had bacteriologic review. Henrici[1] reports 107 cases from the University clinic of which 100 gave the *Streptococcus viridans*. Fifty-two are from my private clinic, fifty of which gave *S. viridans* or *S. hemolyticus;* occasionally *S. mucosa* was recovered. Thus, 150 of these 500 cases gave evidence of streptococcus, either in pure culture, or as the dominant organism. Occasionally the *Staphylococcus aureus, or albus,* or the *Micrococcus catarrhalis* was also observed in conjunction with streptococcus. The bacillary growths were considered contaminations. Gilmer and Moody[2] report streptococci, both *S. viridans* and *S. hemolyticus,* and other organisms, such as *S. aureus, Micrococcus catarrhalis,* the *Bacillus fusiformis,* and in two instances diphtheroid bacilli.

Hartzel and Henrici[3] find in 162 cases that 150 yield streptococci. They report inoculation of twenty-four rabbits with *Streptococcus viridans* isolated from apical abscesses. Heart lesions were found in five, kidney lesion in seven, those of the aorta in three, and of the joints in two.

In the light of the doctrine of focal infections the prevalence of these abscesses, with their flora and its pathogenicity, takes on added significance. To me the apical abscess is merely another evidence of a focus of streptococcal focal disease, just as the lesions found in the heart, the mucosa of the stomach, the articulations or the kidneys are evidences of secondary deposits. In other words, it is hematogenous in origin.

Rosenow[4] remarks:

> It would seem, therefore, that focal infections are no longer to be looked upon merely as a place of entrance of bacteria, but as a place where conditions are favorable for them to acquire the properties which give them a wide range of affinities for various structures.

At the time of devitalization of a tooth apical trauma occurs with its subsequent area of lowered resistance, and possibly lowered or changed oxygen pressure, thereby forming an ideal nidus for streptococcal growth. This is possibly the explanation of all apical abscesses with the probable exception of those capping pulpless roots following caries. Under preexisting conditions of caries I can readily see that infection may travel along the canal, producing direct infection of the alveolar bone. It is an interesting commentary that those who have written on this subject, Billings, Rosenow, Gilmer and Moody, and Hartzel and Henrici have still the old habit of thought in looking on the mouth as a primary territory apart from the rest of the body. The suggestion first made by me[5] that these foci are not primarily dental, but secondary deposits, that is, hematogenous in origin, has produced stormy discussions among dentists. One group has accepted the suggestion, while the other claims that these abscesses are due to dental technic, that is, a matter of poor root-canal filling. It seems highly improbable to me that out of 159 possible infections, 150 should turn out streptococcal in origin if there were not some broad biologic law, such as the selective and mutative activity of this group, to account for such results.

Experimental evidence as to the mode of origin of these abscesses has not been secured. Their pathogenicity and their relation to other concurrent foci have had ample clinical verification. There are four striking forms of evidence for this judgment:

First, acute exacerbation of systemic symptoms takes place following their removal; in other words, focal reactions occur, owing to auto-inoculation at the time of their reduction.

Second, acute new systemic symptoms have followed reduction of these areas; in other words, other foci were established.

Third, improvement and sometimes total recession of other focal areas followed the extirpation of these sites.

Fourth, local and focal reactions occurred with vaccines prepared from infected apical areas.

Seventy-six cases were analyzed clinically in which a streptococcus was isolated from apical pockets.

In a recent study, "Streptococcicosis,"[6] they were classified for convenience into:

First, a rheumatoid group in which the special feature of the cases consisted of arthritis deformans, rheumatoid arthritis, neuritis and myositis, with or without cardiac involvement (38 cases).

Second, a cardiovascular group exhibiting in the main feature heart lesions or hypertension without any appreciable rheumatoid manifestations (6 cases).

Third, an asthenic group closely allied to Group 1, showing joint, periarticular pains, nerve or muscle pains, but in which the main feature is one of asthenia, mild anemia, albuminuria, and occasionally myocardial weakness. Visceroptosis is a common finding in this group (18 cases).

Fourth, a gastro-intestinal group exhibiting gastroduodenal ulcers, gallbladder or pancreatic symptoms, and acute enteritis (4 cases).

Fifth, a genito-urinary group allied to Group 1 in having at times rheumatoid pains with renal, bladder, prostatic or vesicular involvements (2 cases).

Subgroup 1, streptococcus focal infections superimposed on tuberculosis, syphilis, primary anemia or vice versa (8 cases).

A striking feature of this analysis is the diversity of clinical manifestations for which streptococcal focal disease is responsible. The diversity of symptoms is so marked that I have proposed the term "streptococcicosis" for streptococcal focal disease. Under such an etiologic name various branches of the profession could approach this diverse problem with much more clarity and unity.

Of the more striking foci or symptoms in these groups we have manifestations of rheumatoid conditions, 51 per cent.; heart lesions, 47 per cent.; blood (that is, secondary anemia), 43 per cent.; tonsils, 40 per cent.; pyorrhea, 25 per cent.; kidneys (albuminuria and nephritis), 34 per cent.; caries, 15.8 per cent. (Table 3).

Although the tonsil is represented by 40 per cent., a certain number of these patients presented themselves with tonsils removed; or in the early efforts at correlation, the inspection of the tonsil was not so close as it is at present. The tonsil or pharyngeal ring is the commonest focus and possibly the primary portal of

1. Private communication.
2. Gilmer, T. L., and Moody, A. M.: A Study of the Bacteriology of Alveolar Abscess and Infected Root Canals, THE JOURNAL A. M. A., Dec. 5, 1914, p. 2023.
3. Hartzel, T. B., and Henrici, A. T.: A Study of Streptococci from Pyorrhea Alveolaris and from Apical Abscesses, THE JOURNAL A. M. A., March 27, 1915, p. 1055.
4. Rosenow: Transmutation within the Streptococcus-Pneumococcus Group, Jour. Infect. Dis., January, 1914.
5. Ulrich: Some Medical Aspects of Certain Mouth Infections, Dental Rev., December, 1914.
6. Read before the Minnesota Academy of Medicine, Jan. 6, 1914.

entry. Experience with alveolar infection in which systemic symptoms were present has made us very cautious concerning the apparently innocent looking tonsil. Invariably the same tonsil on closer inspection, and particularly after it had been removed, under protest, by the throat specialist, has proved our suspicions correct.

To us who are attempting active immunization against disease, the blind dental abscess has a very practical significance; the apical abscess may be the only focus left, evacuation of which will permit the reestablishment of renewed integrity to all parts. It may hold the balance of power in the struggle of the body for complete sterilization. Thus the discovery of such a focus is important in the prognosis of any given case.

TABLE 3.—NUMBER OF TIMES CLINICAL MANIFESTATIONS OR SYMPTOMS WERE NOTED IN SEVENTY-SIX CASES OF STREPTOCOCCICOSIS WITH ALVEOLAR ABSCESSES

Rheumatoid conditions	39	Gastric ulcer	4
Cardiac lesions	36	Cystitis	3
Secondary anemia	33	Pharyngitis	3
Chronic amygdalitis	30	Ascites	2
Pyorrhea	20	Glucosuria	2
Albuminuria	19	Prostatitis	2
Caries	12	Conjunctivitis	2
Visceroptosis	10	Primary anemia	1
Adenopathy	8	Enteritis	1
Neuritis	7	Syphilis	1
Bronchitis	6	Iritis	1
Hypertension	6	Emphysema	1
Nephritis	6	Exophthalmic goiter	1
Tuberculosis	6	Rhinitis	1
Leukocytosis	4		

In every case of streptococcal focal infection, its presence or absence must be established. I can look back on my attempts at vaccine therapy in middle ear, accessory sinuses, and chronic bronchial cases, and now see a possible explanation for some of the puzzling reactions and failures I achieved.

In every case of focal infection due to streptococcus, the presence of this focus may aid us in obtaining material for the preparation of vaccines. Much trouble and disappointment in attempting cultures from glands and tonsils can thus be avoided.

It is difficult, if not too early, to judge of the value of vaccine therapy in streptococcal focal disease. It is our custom to make a vaccine from a root pocket in every possible case, although the major number of these patients are relieved by the reduction of foci alone.

Ten cases with subacute or chronic rheumatoid conditions were treated with autogenic vaccines made from blind abscesses, all streptococcic in type.

Two cases with acute exacerbations of violent character were quickly relieved. In five cases of chronic arthritis, the patients were much improved. In two cases of arthritis, one of sixteen years' duration, the patients are still under treatment and are undergoing steady improvement. One patient with marked arthritis deformans has stopped treatment with no manifest improvement of the joints. Experience has taught us that small doses of vaccine, 5 or 10 millions at about five-day intervals, give the best results.

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HEMOLYSIS AND AGGLUTINATION IN TRANSPLANTATION *

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NEW YORK

In studies of the conditions incident to the cause of autolysis and the dissolution of the transplant, we devoted especial attention to the influence of hemolysis and agglutination on transplants. No question is more timely than that concerning the causes of their absorption.

Most authors lay great stress on the importance of eliminating the two great dangers in blood transfusion — hemolysis and agglutination. We must consider blood transfusion not only as an infusion of a certain quantity of fluid, but also as a transplantation of a definite mass of tissue represented by the cellular elements of the blood.

Accordingly, before transplanting the thyroid, we first made hemolysis and agglutination tests, and operated only when these reactions were absent.

Owing to difficulties in obtaining and in handling the blood (which have since been obviated to some extent by a new method), we are thus far able to report results in only seven instances.

HEMOLYSIS AND AGGLUTINATION

Date	Donor	Host	Hemolysis	Agglut.	Remarks
1/22	179	180	Negative	Negative	In this instance there was autolysis and absorption in three months.
2/3	190	191	Partial	Negative	Thrombosis of the artery set in in six weeks.
2/17	201	202	Negative	Negative	The results were good after eight days.
3/10	224	225	Negative	Negative	The results were good after three weeks.
3/12	228	229	Negative	Negative	Hemorrhage set in in two weeks.
3/20	215	239	Negative	Negative	
4/9	281	282	Negative	Negative	

Before the employment of these tests, we were unable to obtain any results from homotransplantation. But since the importance of these reactions came to be more clearly appreciated, we have in two instances, at least, obtained a satisfactory preservation of the transplant for one and three weeks, respectively. While our experiments have been few in number, we feel justified in concluding from results so far obtained that the hemolysis and agglutination tests to a certain extent are some indication of the tolerance of the tissues of one animal for those of another. Such a hypothesis is given some support by the fact that in blood transfusion these reactions are now largely depended on as clinical indicators. May they not therefore be reasonably expected to be of equal significance in the transfer of the less liquid tissues from one organism to another?

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FACTITIOUS DERMATOSES *

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The object of this paper is to record a group of cases of self-inflicted dermatitis, which have occurred during the last several years in the practices of the late Dr. James Nevins Hyde, the late Dr. Frank Hugh Montgomery, and myself.

Much confusion exists concerning the dermatitis herein described, and the physician who is originally consulted in these cases rarely is able to recognize their character, commonly on account of prejudice, through personal acquaintance with the patient or family. It is on account of this failure to appreciate the possibilities in these cases that it has been thought worth while to record this group of thirty-four cases.[1]

Opinions differ among men who recognize these, and some able observers have recorded cases as being of spontaneous origin, in hysterical persons, which later have proved to be factitious. That there are some cases in which a spontaneous origin can hardly be doubted, there is no question. Yet the large majority, according to most observers, have an associated, though often unrecognized, factitious origin.

In public practice, paupers and others are not infrequently seen who inflict injuries for the purpose of securing financial or other aid. In Europe, the professional malingerer is not uncommon, and the degree of skill exhibited by these people in imitating disease is at certain times high. In this country this class of cases is uncommon.

There is another class in which existing skin diseases are aggravated by irritation, and prolonged by the patient for various reasons. All of these types are excluded from this paper.

The major portion of the patients recorded here were women and poor girls of a highly neurotic temperament, and showing distinct stigmata of hysteria. As will be noted from the case histories, the lesions occurred on accessible parts of the body, such as the breasts, abdomen, and limbs; all were areas accessible to the right hand. The right arm was commonly exempt, except in left-handed individuals. The lesions occurred suddenly in all cases, and usually developed during the night, when the patient was alone; and several of the patients were able to predict the exact spot where a lesion was going to develop, much to the astonishment of their friends.

An interesting feature, in a large number of cases, was the fact that the disease was initiated through accident. This may have been trifling, and the dressing employed in the treatment gave the suggestion to the patient as to how to carry out the deception.

The symptoms in the cases vary from a simple erythema to vesicular, bullous, gangrenous and ulcerating lesions, with their sequels.

A number of cases are on record, and there occurs one in this series, in which tissue destruction has been marked, and amputation of fingers, the whole hand, and even the arm has been performed, with the full consent of the patient.

The methods employed by these patients are varied, and are at times exceedingly difficult to detect. A long list of animal, vegetable and mineral substances is included in this category. Those most commonly used are phenol (carbolic acid), croton oil, cantharides, mustard, various acids and alkalies, including lye, tartar-emetic ointment, cresol and compound solution of cresol. Other methods employed have been burning with matches, with pieces of hot metal, or with bottles containing very hot water, and friction with the fingers, sandpaper, and other rough substances. In one patient whom I saw, intense dermatitis was aroused by rubbing tobacco briskly into the skin of the genital region. The character of the lesions and the intensity of the inflammation depend not only on the agent employed, but also on the strength of the solution, the duration of the application, and the tissue resistance.

ETIOLOGY

The cause of these peculiar actions in the individual must be sought in derangement of the nervous system. All the intricate processes concerned in hysteria could be brought forth to explain the condition here. In some cases there is exhibited a desire on the part of the patient to escape from disagreeable duties or surroundings; in others, to gain attention, sympathy, interest or pity, or to achieve notoriety. In some instances, no possible explanation can be given, and it may be, as suggested by Pernet and Towle, that in a certain proportion of cases there is a dual personality, or a subconscious state, in which the lesions are produced, while in the normal condition the patient has no recollection of the acts performed in the other state.

Towle[2] explains the production of these lesions from the standpoint of hysteria, on the ground that the initial wound which occurs in numbers of cases serves as a suggestion to the patient, who afterward enters into a somnambulistic state, in which he is powerless to control the suggestion of producing wounds by any means at hand. On emergence from this state, the patient has no memory of the somnambulistic period or of the production of the wounds, and honestly believes the wound appeared of itself.

Pernet[3] concludes that in some instances there is an altered personality, whereby the self-infliction of wounds is not remembered by the patient at the time they are examined. In all these cases hysterical stigmata can be found.

Galloway[4] states that the more these cases are investigated, the less probable does their spontaneous origin become.

Jelliffe,[5] in a discussion of hysteria, states that the various cutaneous manifestations occurring in hysteria, such as bullous dermatitis and other lesions, are, in the vast majority of cases, artefacts; yet there remain a few in which this factor cannot be proved.

In the major portion of recorded cases the factitious element is present, though it has not been proved in many of them, for various reasons. Many cases of

* Read before the Section on Dermatology at the Sixty-Sixth Annual Session of the American Medical Association, San Francisco, June, 1915.

* On account of lack of space, only a part of the case reports appears in THE JOURNAL. They will be recorded in full in the Transactions of the Section and in the author's reprints.

1. A number of these were collected and the histories written by the late Dr. Montgomery for a paper which he read before a medical society. These are included in this report for the reason that no publication of the report was made.

2. Towle: Gangraena Cutitis Hysterica: A Report of Four Cases Occurring in Hysterical Individuals, with a Review of Ninety Cases in the Literature, Part of Which Were Artificial, the Remainder Being Reported as of Spontaneous Origin, Jour. Cutan. Dis., 1907, xxv, 477.

3. Pernet: The Psychological Aspect of Dermatitis Factitia, Jour. Cutan. Dis., 1909, xxvii, 547.

4. Galloway: Allbutt's System of Medicine, 1911, xi, 54 and 55.

5. Jelliffe, in Osler and McCrae: Modern Medicine, 1910, vii, 846.

pemphigus gangrenosus of supposedly spontaneous origin have been proved to be factitious by the discovery of the materials used, and later by confession of the patient. That spontaneous cases do occur is strongly supported by Van Harlingen.[6]

Corlett[7] reported a case having lesions of this type. The patient was a hysterical girl, aged 15. This case was recorded as one of spontaneous gangrene.

White[8] recorded a case of recurrent, progressive, bullous dermatitis in a hysterical subject. This case was well studied, and in the opinion of the reporter was one of spontaneous occurrence. In the discussion which followed the reading of the paper, opinion was divided as to its spontaneous or factitious origin.

Illustrating the difficulties encountered in arriving at conclusions on this point, may be mentioned a case recorded by Shepherd.[9] This is the record of a patient, aged 20, who had suffered with a recurrent bullous eruption of the face for four years. After much study, the reporter concluded that the eruption was feigned. The possible connection of this eruption with the menstrual epoch was discussed. The interesting feature was its localization on the face alone.

An interesting case of factitious origin was described by Stelwagon.[10] This is the record of a female patient, aged 19, who had produced lesions on the forearms and legs, over a period of several months, by constant rubbing with the finger. The object of the patient was not to create sympathy, but there was an irresistible impulse to rub the skin, which apparently created an agreeable sensation.

Another instructive case was recorded by Weber.[11] This patient, a woman aged 37, was suffering with hysterical functional nervous affections, and was also a malingerer. The lesions consisted of bullae, with superficial ulceration, and were located on the front of the abdomen. Their duration was seven months. A starched bandage was applied, in order to detect deception. The bandage, however, became loosened, probably by deflating the abdomen, by means of which the patient was able to introduce her hand under the upper anterior portion. In this area bullae developed, and on examination some dark specks were detected in the raised epidermis over the bullae. These specks proved to be powdered cantharides. In spite of the finding, the patient would not acknowledge the deception.

Weber also reported a patient who produced spurious Roentgen-ray ulcers by means of hydrochloric acid. In this patient an appendectomy had been performed, as well as three other abdominal operations. On account of menorrhagia, she was treated with Roentgen rays, and later developed ulcers which spread over the whole abdomen, and which were produced as stated above.

Shepherd[12] recorded four cases which are instructive:

1. Gangrenous patches on the skin of the arms, in a woman aged 30, produced by some heated object. No hysterical stigmata.

2. Woman, aged 44, suffering with a bullous dermatitis, produced by some blistering agent, probably cantharides, phenol, acetic or other acid; the object was to avoid disagreeable work.

3. Woman, aged 28, hysterical stigmata present. Bullous lesions produced by cantharides. Object, to excite sympathy and interest.

4. Woman, aged 24; no hysterical stigmata. Gangrenous patches on foot and leg. Agent used not discovered. Original lesion due to an accident, subsequent ones to design.

Pernet[13] recorded two cases of trichotillomania, associated with other factitious manifestations. These occurred in young women aged respectively 20 and 22.

Illustrating each side of the contention are cases recorded by Wende.[14]

The first case, in a young woman aged 17, had its beginning following the application of phenol to a wart situated on the back of the right hand. Subsequent to this, gangrenous areas began to develop on other parts of the body.

In the second patient, aged 18, the disorder followed an accident sustained while sleigh-riding, the first lesions appearing as a group of vesicles on the nates. In this case, the recurrences were always confined to the original area. The peculiar location of the lesions, in a situation hard to reach by the hand, and the character of the lesions, placed the case, in the mind of the reporter, beyond the possibility of being factitious.

Two affections described under other titles should be mentioned here. Under the title "Zoster gangrenosus atypicus," Kaposi[15] described two cases of cutaneous disease occurring in hysterical young women. He later described others, making a total of eleven.[16] In these cases, recurrent lesions appeared, consisting of grouped vesicles and papules, followed by crusting. In some cases, by coalescence, large areas of gangrene were produced, which, after the sloughs had separated, were followed by cicatrices, which often showed keloidal developments.

Rona[17] (Budapest) stated that in 1889 he reported a case of zoster gangrenosus atypicus, and attempted to solve its etiology. Since that time his views had radically changed. In four of the five cases under his observation there were definite hysterical stigmata; in four, the lesions followed a trauma, two from a needle wound of the finger; one followed operation; one followed abortion. In two of the cases, caustic soda was found secreted. That all the cases were identical with those described by Kaposi he believed there was no doubt, and that the differences in the descriptions of the disorder are due to the different chemical substances used in their production, and the concentration, mode and place of application.

Recently, a group of cases has been described under the title "dermatitis symmetrica dysmenorrhoica," by Matzenauer and Polland.[18] They report six cases, occurring in persons of unstable mentalities. The lesions were usually linear, and developed rapidly. The authors set up a hypothesis explaining the spontaneous occurrence of these lesions on the ground of some change in the internal secretions.

Kreibich[19] discusses the same subject, but proposes the term "gangrenosa neuroticum dysmenorrhoica."

6. Van Harlingen: Recent Contributions to Our Knowledge of the Hysterical Neurosis of the Skin, Jour. Cutan. Dis., 1903, xxi, 403. An excellent summary of recorded cases of factitious and spontaneous eruptions occurring in neurotic patients, with extensive bibliography.
7. Corlett: Jour. Cutan. Dis., 1897, xv, 551.
8. White: Jour. Cutan. Dis., 1903, xxi, 415.
9. Shepherd: A Case of Recurrent Bullous Eruption of the Face, Probably Pemphigus Hystericus, Jour. Cutan. Dis., 1906, xxiv, 164.
10. Stelwagon: Arch. Dermat., 1882, viii, 236.
11. Weber: Brit. Jour. Dermat., 1912, xxiv, 78.
12. Shepherd: Jour. Cutan. Dis., 1897, xv, 543.
13. Pernet: Brit. Jour. Dermat., 1915, xxvii, 85.
14. Wende: Dermatitis Vesico-Bullosa et Gangrenosa Mutilans, Jour. Cutan. Dis., 1900, xviii, 548. Report of two cases having a hysteriotraumatic origin.
15. Kaposi: Arch. f. Dermat. u. Syph., 1889, xxi, 561.
16. Kaposi: In Crocker's Diseases of the Skin, Ed. 3, 1903, p. 534.
17. Rona: Arch. f. Dermat. u. Syph., 1905, lxxv, 256.
18. Matzenauer and Polland: Arch. f. Dermat. u. Syph., 1912, cxi, 385 and 454.
19. Kreibich: Arch. f. Dermat. u. Syph., 1913, cxiv, 165 and 172.

Friedeberg[20] describes a case, under the title "dermatitis symmetrica dysmenorrhoica," of a woman, aged 30, who suddenly developed bullous lesions on the cheek, which in the course of a few days became crusted and healed without scarring. At the next menstrual period, a similar process occurred on the trunk.

Mathes[21] discusses the etiology of these cases.

Török[22] (Budapest) discusses the cases of dermatitis symmetrica dysmenorrhoica, and concludes that the most probable explanation of these cases is the presence of a factitious element.

DIAGNOSIS

The diagnosis is usually not difficult to one familiar with cutaneous disorders, since the lesions, though of a simple inflammatory nature, are different from those of any recognized disorder. The most important points are the following:

The lesions occur within reach of the patient's hands, and are usually most numerous on regions easily accessible to the right hand. These include the anterior surface of the body, the left arm, forearm and hand, the lower extremities, and the right side of the face and neck. As a rule, the palms and soles, eyelids, mouth, nose, ears, scalp, and genitals are spared.

The lesions are always sharply outlined, and of unusual, often fantastic, shape. They appear suddenly, at irregular intervals, usually one or two at a time, and run a fairly rapid course. When fluid caustic is used, it frequently happens that one or more drops run down the skin from one of the lesions, leaving a characteristic streak, which is usually lighter in color and shows a more moderate degree of inflammation than the patch from which it depends. When the caustic is applied with a needle or pin, as is frequently the case in gangrenous areas, the border shows a finely jagged or serrated edge, made by the numerous punctures in the advancing border. When gangrene is present, it is usually very superficial, and is separated from the normal skin by a narrow, vivid red line. The fingers, nails or some article of clothing are often stained by the agent employed.

Subjective sensations, usually pain and burning, may be greatly exaggerated by the patient, who will cringe or jump at the slightest touch during the examination, and will complain bitterly about the distress caused by the simplest and lightest of dressings. On the other hand, some of the areas are largely anesthetic, and some of these individuals like to exhibit their ability to endure pain. Many of the patients enjoy mystifying their medical attendants by predicting, from twelve to twenty-four hours in advance, the exact areas on which new lesions will occur, claiming that during this period they experience in these areas a sense of heat and burning and other abnormal sensations.

The impulse one has is to confront the patient immediately with the charge, and there are several who advocate such procedure. While occasionally this terminates happily, in the majority of cases it probably would fail, in which case it would work an injustice on the patient, her friends and the attending physician. A plan which I pursue is to instruct the patient in methods of treatment, and during the instruction impress her with the idea that there is no question whatever as to what has produced the lesions, and that if she will faithfully apply the remedies suggested, and as faithfully avoid using anything else, she will make a prompt recovery. Then have the patient watched with care, using at a later date, if necessary, fixed dressings; that is, dressings which cannot possibly be removed without detection; or, if driven to extreme measures, take the patient to a hospital, where she can be kept under strict surveillance, both day and night, when, by complete disappearance of the lesions and the nonappearance of new ones, the diagnosis is proved. This, however, does not reveal the causative agent. In an intelligent patient, the appeal to her pride and self-respect has weight. In certain of the cases no impression is made by such an appeal. It may be that a number of these patients belong to the group described by Pernet and Towle, those who really do not know that they have inflicted the injuries.

Further aids to the diagnosis may be found in the general characteristics of these patients, the unusual history of the disorder, the discovery of anesthetic areas, especially of the fauces and conjunctiva, and other evidences of hysteria.

CASE REPORTS

Case 1.—The patient whose lesions are shown in the illustration was being attended in one of the hospitals of the city for ulcerated, gangrenous lesions occupying the entire length of the left hand, forearm and arm. I saw her in consultation at the hospital. She had been examined by a number of physicians, and apparently was much pleased at the prospect of having another examination. There were several physicians and hospital attendants in the room when the patient was examined. During the undressing of the arm, the following history was elicited: At the beginning, an apparently serious lesion occurred on one finger. A physician was called, who dressed the lesion and stated that he would redress it the following morning. On the second visit, a similar lesion was found immediately above the bandage. This was dressed, and, either daily or on each alternate day for several weeks, new lesions continued to appear immediately above the bandage. They were painless, occurred suddenly, always developed during the night, and the first lesion seen by persons other than the patient was a bulla. The bulla would soon become dark, gangrene would follow, and either deep or superficial ulceration result. At the moment of examination, lesions varying from superficial scars to deep ulcers, through the various stages, were present. They were irregularly shaped, and varied in size from that of a split pea to that of a silver dollar. During the time the dressings were being removed, the lesions were carefully examined, but no questions were asked the patient. She, however, was apparently enjoying the situation and attention. When the dressings were all removed, with no preliminaries, the patient was informed that the lesions were due to the application of phenol made by herself. She was so surprised that before she could master her emotions she admitted the deception, and finally stated that by accident she had learned how to produce the lesions with phenol, and continued the process, as it relieved her from the disagreeable duty of practicing at the piano.

Case 4.—Miss I. V., aged 22, of nervous temperament, had had the cutaneous disorder one and one-half years. The history obtained from the patient and her mother was as follows:

In the beginning, a finger was burned with nitric acid. The lesion remained open for some time. Three months later an ulcer appeared in the same area. Six months after the beginning, curettage was performed and necrotic tissue removed. One month after the curettage, an incision was made into the hand, after which the lesions disappeared, excepting a small spot. Two months subsequently, the record states, the patient was in good condition. One month later lesions began to reappear. New ones occurred still another month later, and two months subsequent to this they began

20. Friedeberg: Arch. f. Dermat. u. Syph., 1913, cxiv, 173.
21. Mathes: Arch. f. Dermat. u. Syph., 1913, cxiv, 185.
22. Török: Arch. f. Dermat. u. Syph., 1913, cxiv, 185.

to appear higher up the arm. The lesions all occurred suddenly and began as blisters.

On examination, the following was noted: The dorsum of the left hand was erythematous, and showed scars from old incisions and lesion relics. One active lesion was present on the side of the face. This was irregular in outline and covered with a brownish eschar. The entire arm and forearm, left side, showed superficial atrophy and scar formation, in irregular areas.

The mother was informed of the diagnosis, and was good enough to cooperate in trying to determine what was being used. Her physicians were also informed, but were skeptical as to the possibility of the disorder being self-inflicted. Eight months afterward, one of the attending physicians reported that, after compound solution of cresol had been found in the patient's stocking, she confessed that the lesions had all been self-inflicted. Following this disclosure, recovery ensued.

CASE 5.—Miss F. R., aged 15, had had the cutaneous disorder seven months. The patient was of a highly neurotic temperament and showed marked evidence of hysteria. The disorder began as an abrasion on the left hand, from which lesions spread up the forearm. The early lesions were vesicles filled with semipurulent material. Each new attack was accompanied by marked elevation of temperature, the family stating that it reached as high as 108.5.

Bullae continued to appear from time to time. The day before the patient was examined, a new lesion appeared on the forehead, at which time a temperature of 106.5, as recorded by the mother, was reported. There were never any lesions in the mouth. The patient vomited considerably, but had no nausea. She frequently had spells of fainting; these always occurred when she was with another person.

The patient was right-handed, and was apparently normal mentally; there was no pharyngeal reflex; the corneal reflex was much reduced.

On the forehead a dime-sized, irregular, pigmented, superficial burn was present; healed lesions were present on the left arm; there were irregular hypertrophic scars, with similarly shaped and circular, well-defined, superficial, dried, burned areas on the right arm, in various stages of healing.

Temperature taken at time of examination was normal. Leukocyte count was 8,000. Visual fields were normal and equal.

The diagnosis of factitious dermatitis was made and forwarded to the patient's attending physician. A letter received from the latter some months later reported that under the care of a competent trained nurse the diagnosis was confirmed, that phenol was found to be the agent used, and that the patient had made a complete recovery.

CASE 7.—A strong, healthy, Scandinavian girl, age 22, presented a peculiar eruption occupying the anterior surface of the right arm from the wrist to a short distance above the elbow. Three weeks prior to examination, she had pricked her finger with a pin; it became sore and painful, and her physician feared blood poisoning. A few days after the accident, she fainted in church. Fearing serious complications, she was taken to a hospital, where she remained two weeks. A day or two after entering the hospital, a small red area, more or less covered by blisters, appeared, which darkened in color and resulted in a few days in superficial necrosis. Several of these areas appeared on the forearm while the patient was in the hospital.

Examination showed the anterior surface of the right arm (the patient was left-handed) to be occupied by about seven separate rectilinear areas of altered integument. These were placed with their long axes in a transverse direction. Roughly estimated, their size averaged from 2½ to 3 inches by 1 to 1½ inches. Each was separated from those adjacent by a strip of normal skin. The borders were well defined, but in places irregular and frayed out. The lesion nearest the hand, opposite the carpal joint, was practically healed, leaving a scar; the uppermost band was the most recent. The lesions from above downward showed the various stages of evolution and involution of a dermatitis due to the application of a solution of phenol. She had evidently first made an application to the wrist, and, being ignorant of the power of phenol, had used enough to cause a fairly deep burn, which resulted in superficial necrosis and ultimate scarring. While lesion No. 1 was under treatment, she caused No. 2 to appear just above the bandage. No. 3 was produced above the bandage which included No. 2, and so on up the arm. The later lesions were noticeably less severe than the first.

It was learned later, from the girl's history and her conduct, that she was a degenerate. She and her sister had the same lover, and, thinking that her sister was receiving too much attention from him, she had taken this means of attracting his interest and sympathy. The lover departed, and no more lesions appeared.

CASE 10.—The patient, Mrs. J. H. W., was 30 years of age, and fond of society. She had been married twelve years, but had never been pregnant. Her husband, who was 25 years older than she, was a minister and circuit-rider, his work taking him away from home a large portion of the time. She was a well-nourished woman of average weight, with some tendency toward hysteria, her physician stated. In December, 1905, she had a hemorrhage from the uterus, which examination showed had come from an ulcer of the uterine wall. Diagnosis of adenocarcinoma was made and the uterus curetted.

The patient stated that the first skin lesion appeared, simultaneously with the hemorrhage from the uterus, as a small pinkish patch on the face. This appeared suddenly. The color gradually deepened for two or three days, then slowly faded out, leaving a stain, which eventually disappeared entirely. Later, numerous patches appeared from time to time on different parts of the body. During a year and a half she had rarely been entirely free from them for more than a week or two at a time. On the body, many of the later lesions had been of rather severe type, the redness being followed by the appearance of numerous small vesicles, or larger bullae. The contents of these bullae, if allowed to flow over the sound skin, produced new lesions.

On examination, the face showed a number of irregularly shaped but sharply outlined areas of erythema, in varying stages of involution. There were no scars on the face. On the body, especially over the breast and on the left arm and forearm, were numerous sharply outlined areas of irregular, and occasionally fantastic, shapes in varying stages of evolution and involution, including acute erythema, vesicles and bullae on hyperemic bases, superficial necrosis, pigmentation and, finally, a few scars.

She had been in the hands of a dozen or more physicians, and stated that she was generally known in her section of the country as "the medical puzzle." She said she always knew from twelve to twenty-four hours in advance, from certain burning sensations, exactly where the lesions would appear; and that the drawing of a blunt instrument over her skin, as had been done by several physicians to test the reaction, was always followed, in from twenty-four to thirty-six hours, by a new lesion. She was frankly told what the trouble was, but denied all knowledge of how the lesions occurred. Six months later, we learned that there had been no recurrence of the lesions.

CASE 12.—A woman, aged 19, married two months, applied for treatment of peculiar lesions which had appeared on her breasts, left upper arm, neck and face. They had been coming, one or two at a time, for five weeks. The first one followed an accidental scratch, to which she had applied an antiseptic liquid given her by a druggist.

On examination, the lesions were seen to be chiefly small, irregular, sharply defined patches of erythema. On the breast were several small bullae surrounded by a narrow hyperemic zone. Subsiding lesions were followed by pigmentation, but no scars were visible. From the under margin of a triangular hyperemic area on the breast there extended downward an irregular band from one-eighth to one-quarter inch wide and 1½ inches long. The inflammatory process forming this band was less severe than that on the area above, and was undoubtedly produced by a drop of liquid escaping and running down over the skin.

The woman had always lived in the country, had never been away from home before, and had come immediately

after her marriage with her husband to the city, where they had no friends or acquaintances. He was busy with his work all day, and she was, in consequence, very lonely. The nature of the condition was explained to the husband alone, and he very sensibly recognized the situation and generously stated that he did not blame the girl. He sent her home for a few weeks, and a year later reported that everything had come out all right, and he was greatly obliged for the advice given.

Case 20.—A girl, aged 18, apparently in good general health, reticent, at times almost sullen, in association with her companions, was a probationer in a Sisters' hospital. While assisting in dressing a patient with a number of ulcers on the skin, she pricked her finger, and it became infected. The lesion was later incised and curetted, and probably healed. Six months later, the tip of the finger became inflamed, and in two or three days turned black. With hot fomentations, the lesion cleared up. During the next six months, the occurrence was repeated several times, until the first phalanx appeared to be entirely gangrenous and was amputated. Two months later, the second phalanx of the same finger became involved in the same manner and was amputated. Following this, she remained well for three months, when the remaining phalanx of the finger became gangrenous, and was amputated by the same physician. Three weeks later, gangrene began to spread over the back and sides of the hand. On account of the rapidity of the process, the surgeon contemplated removing the hand at the wrist, an operation which the patient begged him to perform to save her life. Before the operation was performed, however, a consultation was held. On examination, the gangrene was found to be superficial, and was bounded by a narrow red line. The advancing border showed a finely jagged or serrated edge, in which the marks of individual punctures could be detected. There was slight anesthesia of the fauces and conjunctiva, and the general condition of the girl suggested hysteria.

The patient denied having made any application herself, but under fixed dressings made a complete recovery, and later confessed to the Mother Superior that she had produced the trouble herself with a needle and pure phenol.

Case 23.—Miss A. Y., a girl aged 17, in good general health, was the eldest of nine children, and, on account of the death of her mother two years previously, had had charge of the entire household.

Six weeks previous to the examination, her finger was scratched on a barbed wire. The skin turned black three days later, and blisters appeared on the hand and arm. These began as pimples, which became dark in three days, and gradually became larger.

On examination, there were seen on the outer surface of the left forearm and on the wrists and hands eight or ten irregularly shaped patches, from 1½ to 2 inches in diameter. There were two acutely inflamed areas, with an irregular, finely jagged or serrated outline, thickly covered with pinhead or slightly larger vesicles. These were of but two or three days' duration. Other similar areas were covered with black, gangrenous crusts, surrounded by a narrow red line. There were two rather thick, irregular, pigmented scars. The tissue destruction was deeper than that seen in most of these cases.

On confrontation, the patient admitted that she had produced the lesions with a pin dipped in lye. A letter received some months later from her family physician stated that the patient returned home and made a complete recovery.

Case 26.—Mrs. J. M. W., a married woman, aged 33, and apparently in good general health, had been seen by many physicians, a number of whom were impressed by the fortitude with which she bore pain. She was equally impressed by the fact that none of her physicians had discovered what the trouble was.

Two and a half years prior to this examination, which was made by Dr. Montgomery, she had all the symptoms of pregnancy up to the seventh month, when suddenly the whole thing disappeared.

The cutaneous disorder was of two years' duration, and had begun in the breast. A month later lesions appeared on the nose. The trunk soon became involved, and finally the limbs. The lesions were accompanied by burning and itching sensations. On the body they began as a blister on the sound skin, or on a slightly reddened area. Frequently, her face had been nearly well. The lesions always appeared suddenly.

On examination, there was found a superficial dermatitis of the nose and cheeks, in irregular, sharply outlined areas, covered with a thin edge of scales or crusts. On the upper surface of the breasts and above them were numerous irregular, sharply defined, erythematous spots, one-quarter to three-quarters inch in diameter. Some of these spots showed slight vesiculation or a superficial necrosis. Areas were seen in all stages of healing and of resulting pigmentation. They were most numerous over the breasts, the abdomen and the left arm. On the breasts were two small areas of erythema, from the lower border of which extended the characteristic streaks caused by the dropping of the fluid over the skin. There were several lesions about the umbilicus, others in the groin and on the inner surface of the thigh.

Her attending physician was informed of the nature of the trouble, and after using fixed dressings for a time he discussed the matter with her. The patient agreed that she would do as he directed, but she promptly put herself in the hands of another physician.

Nearly a year after this examination, I saw the patient in a clinic given before a medical society, when the diagnosis of factitious dermatitis was independently made. The difficulty in making the diagnosis at this time lay in the fact that the patient had become more skilful and was now producing perfectly circular, regular areas, and was not spilling any of the fluid. At least six or eight members of the society discussed the hysterical manifestations seen by them in this case, and all were agreed as to the factitious origin of the lesions.

Case 29.—The record of this patient, Miss M. B., aged 27, includes four or five visits to the Presbyterian Hospital, one or more to the County Hospital, and the attendance of several physicians.

About May, 1910, the patient received an injection of tuberculin in the left arm above the elbow. Three days later, the arm swelled, and the patient was sent to the dispensary for treatment. A salve containing phenol was applied, and the patient returned home. Shortly after this, lesions began to occur, extended down on the arm, later appeared on the left leg, and subsequently, as time went by, on the entire trunk, right arm, and all parts of the body within reach of the hands.

I saw the patient shortly after the onset of the trouble. It was evident that the original phenol salve had given her the idea and the material with which to carry it out. She was hysterical, almost always moderately deaf, sometimes entirely so, and was capable of marked imitation. During the years she had been under observation, the type of the lesions had changed. It is likely, therefore, that the materials used had been modified.

Monday, Nov. 4, 1910, the patient was seen in the clinic at which time the lesions were present on the left arm, the trunk, the foot and the lower limbs, the right arm being free. Up to that time she was supposed to be deaf. In the clinic the case was demonstrated, and attention was called to the absence of lesions on the right arm. November 7, three days later, the patient again attended the clinic, and entered the hospital on the same day. At this time she had a number of lesions on the right arm, which apparently showed evidence of suggestion. The house physician, Dr. Tope, made these notes on that day:

"Lesions situated on both arms, from shoulder to wrist. They consist of open ulcers, gangrenous areas, some covered with dirty-gray sloughs, other ulcers that are healing, and many scars, some of which are keloidal. The patient professes ignorance as to the cause or duration of the lesions;

professes to be deaf, but can hear much better than she admits. Speaking in ordinary tones to her, she not only hears but understands. If asked if she understands, she says 'No.'"

Nov. 1, 1912, when the patient was again in the hospital, Dr. Pincoffs, the house physician, wrote a description of the cutaneous lesions much as given above.

The record further states that the patient mentally was at first in an antagonistic attitude, but during her stay at the hospital she became more cheerful and went about the ward conversing with other patients. Deafness and blindness were complained of, but these later disappeared. The question of a certain amount of true deafness was not definitely settled, but the amount varied from day to day.

During one of her temporary visits at the County Hospital, she saw numbers of syphilitic lesions in inmates of the same ward. After leaving the hospital, many of her lesions assumed the peculiar circinate outlines which she had witnessed at the hospital.

She was examined as to her mental state by Dr. Bassoe, who discovered marked evidences of hysteria. There were no other neurologic changes.

The patient had been under the care of Dr. Mackey during the greater part of this time, and it was the observation of all that during her residence in a hospital the lesions always cleared up. Immediately on her release they would recur. As they were always produced at home, and as we had had no assistance while she was there, we had no means of ascertaining the agent employed, except the one originally suggested, phenol.

Dermatitis factitia, induced by phenol (Case 1).

SUMMARY

Of the thirty-four patients described above, thirty were females. Fifty per cent. were under 22 years of age. Trauma preceded the lesions in twelve cases. Of these, two had been burned with acid, two had had antiseptic applications made by a druggist, and two had been treated with phenolized salve. Of the thirty-four, thirteen confessed and made an immediate recovery; one case was proved under the care of a nurse, and three under fixed dressings; one patient completely recovered after being confronted. Of the total number, twenty-five made complete recovery, three disappeared, one was a degenerate, two gradually recovered after a long time had elapsed, and in two cases the lesions continued. One patient never had lesions while under observation in the hospital, but continued to have them outside.

Of the thirty-four, it was proved that fourteen used phenol, four probably used phenol, one used compound solution of cresol, one phenol and other substances, one croton oil, one lye, one sandpaper, one tobacco, one the electric needle and unknown but liquid applications, six entirely unknown substances, and three unknown liquids. It is interesting to note that several patients recovered after being confronted with the materials they had used, even though denying their use. Change of scene in one case induced recovery, and in another the departure of the person whose presence had irritated the patient. In only four of the group was the diagnosis not positively proved, either by confession or by complete recovery of the case under fixed dressings or constant supervision. In the four, however, the evidence was so strong that there was practically no doubt as to the diagnosis.

CONCLUSIONS

First, it seems probable that the major portion of cases described as pemphigus gangrenosus are in reality examples of factitious dermatitis. That the major number of cases recorded under the title "zoster gangrenosus atypicus" (Kaposi) are of the same type, and also those more recently described under the title of "dermatitis symmetrica dysmenorrhoica," seems probable.

Second, while the disorder is comparatively rare, it probably would appear more common if recognized more generally. As stated in the beginning, the family physician will generally, on account of personal acquaintance with the patient, refuse to admit even to himself the possibility that this particular patient would produce such lesions.

On the recognition of the disorder, the admission of the patient as to its cause, and the cessation of the practice, immediate recovery generally takes place; if not, careful attention to the measures detailed above should be employed, when the desired result is accomplished. Treatment is a simple matter, and requires only the application of the various remedies indicated by the stage of dermatitis present. The only difficulty in any case is to prove the diagnosis.

25 East Washington Street.

ABSTRACT OF DISCUSSION

DR. HOWARD MORROW, San Francisco: I have had five or six of these cases in the past ten years. They have all been in women. The majority of the patients have been over 30 years of age. I can recall two who were to me of great interest: One was that of a telephone operator. She disliked her work and stayed away by producing a phenol burn on the arm. Her family had sympathy for her and she was kept at home. She applied the phenol as a compress and produced deep sloughs. Another girl was seen in consultation with Dr. Buckley some time back. She applied phenol to different areas on her leg. She told her folks she was run down and would have to take a trip to get rid of them. After she returned from the trip, these

lesions disappeared. After a time they started again. I suggested zinc oxid paste, as the patient cannot remove that, and reapply it. Each day after the application of the paste, new lesions would appear in the neighborhood. After this was done four or five times, Dr. Buckley became annoyed at the patient and he said to her, "You do this yourself and it must be discontinued, or I will report it to your family." She at first denied this but afterward admitted it. No more lesions occurred.

DR. LASHER HART, Los Angeles: Dr. George Henry Fox had a case in his clinic. Dr. Fox took the patient into a room and said, "What have you been doing here?" She admitted that the lesions which she had on her forearms had been caused by rubbing salt into them, and that she was seeking sympathy from her employer. Dr. Fox confronted these patients at once with the idea that he knew the diseased areas were self-inflicted, and I have always followed out that idea in my own practice since then.

DR. GEORGE M. MACKEE, New York: As bearing on possible etiologic factors, we had in Dr. Fordyce's clinic a few months ago a case of neurosyphilis with lesions of factitious dermatitis on the chest, arms and shoulders. The interesting question was whether or not the neurosyphilis had so altered the nervous system as to produce a malingerer. As is well known, cases of malingering are at times exceedingly difficult to diagnose, and are not infrequently confused with other diseases. I recall a case in which the first ulcer developed on the back of the hand; later numerous ulcers occurred on the forearm. The case was investigated for the possibility of sporotrichosis, syphilis, tuberculosis, etc., but later the patient was proved to be a malingerer.

DR. A. J. MARKLEY, Denver: During the last six or seven years I have had the misfortune to observe a number of cases of this kind and believe that, as Dr. Ormsby has done, it is necessary carefully to distinguish between the two types of individuals in which this occurs; that is, the malingerer and the neurotic. In the malingerer, if the patients definitely know that you are familiar with the manner in which the lesions are produced, they may be frightened off. On the other hand, hysterical and neurotic individuals are less easily dealt with, and when accused of inducing these lesions themselves, are often led by their neurotic tendencies into practices of more serious kind. Such cases belong definitely in the hands of the neurologist. Of this type, a girl in an orphanage in Denver had become a serious charge to the good Sisters who took care of her. She had disfigured herself with some form of caustic, sparing no part of her body which was accessible to her right hand. The only part which she had been unable to reach was the scapular region of the right shoulder. When confronted with the charge of self-infliction of these lesions, she ceased to produce them, but other stigmata of hysteria occurred, and only when she had been placed under proper neurologic care was any permanent benefit obtained.

DR. RICHARD L. SUTTON, Kansas City, Mo.: I envy Dr. Ormsby the long list of cases which he has had opportunity to observe. The character of the lesions, the region involved, and the fact that the affected areas were usually readily accessible to the right or left hand are also suggestive. I recall a recent case in Kansas City in which a patient, a woman student, had burned herself with nitric acid. The lesions healed, but new ones speedily appeared. The superintendent of the school was a very religious woman, almost excessively so, and she would not believe it possible that a girl placed under her care would do such a thing. It was only when the matter was thoroughly sifted and the diagnosis verified beyond the shadow of a doubt that the girl was sent home as utterly unfit for the training she had taken up. So one must be as careful as possible in approaching the patient as well as her family, if the treatment is to be ultimately successful.

DR. OLIVER S. ORMSBY, Chicago: In one of the illustrated cases which I intended to read, the question of autosuggestion arose. It has been thought that sometimes by autosuggestion lesions may be produced spontaneously; that is, a patient is able to bring out a lesion on the body by fixing the mind on it. These, however, are often factitious, and may be illustrated as follows: In a clinic on a certain Tuesday there was a patient who was supposed to be deaf. The lesions were all placed in regions readily accessible to the right hand, on the left side, and I called this fact to the attention of the assistants. On Friday, when the patient returned, she had lesions on the right side, including the right arm and forearm. At a later date, when in the County Hospital, she observed cases of syphilis in women having that disorder, and some months later she began to have lesions which were circinate in outline, and these lesions were supposed by several to be of syphilitic origin. The question of suggestion is sometimes important.

ROENTGEN STUDIES AFTER GASTRIC AND INTESTINAL OPERATIONS*

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Through my institutional connections I have for a number of years enjoyed special advantages for the roentgenologic study of patients after gastric and intestinal operations. My colleagues have extended many much appreciated courtesies in arranging for the postoperative studies on which this paper is based Results both good and bad have been included, the patients studied representing the work of a number of different surgeons, some of the cases coming from

Fig. 1.—Gastro-enterostomized stomach, five hours after eating. Note the delay in the jejunum opposite the stoma. After complete clearance of the stomach, this residue in the jejunum persisted for several hours. This case is typical of the findings in a large percentage of gastro-jejunostomics.

the most famous clinics of this country. Many of the patients had no complaint, the postoperative condition being satisfactory, at least subjectively. Others were

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* Because of lack of space this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints. A copy of the latter will be sent by the author on receipt of a stamped, addressed envelope.

referred for postoperative convalescence, and the opportunity was improved to make the postoperative roentgenologic observations. In the majority of the cases reported in this paper, the examination was advised in the hope that it would assist in ferreting out the cause of untoward symptoms. I would not insinuate that, because the majority of the cases included in the series studied have been unsatisfactory, referring especially to colonic operations, the majority of such cases with operation show similar late results; I merely report my findings on account of their obvious importance. The untoward results have been particularly frequent after operations for the relief of intestinal stasis, real or supposed.

Fig. 2.—The small rounded residue often seen at the site of the appendix stump following appendectomy; also sometimes seen about the base of a diseased appendix before removal. In some of the cases showing such a residue after the barium meal, the operation had been performed years before.

ACUTE SMALL BOWEL OBSTRUCTION

Our experience during the last five years has convinced us of the value of the Roentgen examination in the diagnosis of postoperative acute small bowel obstruction, with special reference to the decision as to the advisability of surgical interference. Having accumulated the evidence in a sufficient number of cases of suspected obstruction following operation, it has seemed warranted to urge strongly the value of the Roentgen study in all such suspected cases with special reference to the existence of an obstruction, the degree of the hindrance, the location and perhaps the nature of the lesion, and whether or not the obstruction is progressive. If nonsurgical treatment seems preferable at first, the progress of the case under treatment may be observed roentgenologically.

Emphasis should be laid on the fact that it is not necessary to administer any barium or other opaque material in pursuing these studies, the observations being made possible by the gas distention of the intestine. There is, therefore, no delay incurred; and no objection can be raised to the Roentgen study of these patients on account of possible danger through delay or through the introduction of new food material into the digestive tube in the presence of possible obstruction. A Roentgen study should be required in every case of suspected postoperative obstruction.

Given a patient on the third day after operation, presenting symptoms suggestive of acute intestinal obstruction, he should be transferred to a carrier, conveyed to the Roentgen-ray department, a 14 by 17 inch plate with intensifying screen placed under him, and a flash exposure made. It must be short enough so that the patient can hold the breath during the exposure. The plate is then removed and the patient returned to his room and bed without further manipulation or inconvenience than is required to lift him onto the stretcher and back to bed again. No preparation of any kind is required; dressings are not removed. The plate is then developed and the findings may be noted as soon as it is taken from the fixing bath. Not more than twenty minutes need be consumed in the entire process.

The developed roentgenograms will reveal at once whether there is any gas distention of the bowel, and if so, whether the distention occurs in the small or in the large intestine. Acute postoperative dilatation of the stomach may be at once ruled out. Small and large bowel may be distinguished by the characteristic outlines of the gas areas. In acute colonic obstruction, the haustral markings as well as the peripheral distribution of the gas along the course of the colon are sufficiently characteristic to identify the large bowel. Equally characteristic is the appearance of the gas-distended coils in acute obstruction of the small bowel; the coils are more or less parallel and the caliber of the small intestine is increased to 1½ or 2, and sometimes 3 inches. It is seen that the distention is not confined to a short segment of the intestine but involves one or more feet of the small bowel, usually many feet. A certain amount of postoperative distention of the small bowel is frequently noted where there are no symptoms suggestive of obstruction, but in the serious cases the degree of distention is at once apparent and suggestive. The serrated contour of the bowel is characteristically different from the contour of the colon due to the markings of the haustra coli;

Fig. 3.—Very marked distention of the colon with gas in a case thought to be acute small intestinal obstruction. The gas distention was relieved by washing out the colon, and the administration of pituitary extract. The distribution of the gas and the characteristic markings of the bowel outlines indicate colon rather than small bowel.

so that we are at once able to recognize and differentiate acute postoperative gastric dilatation and obstruction in the large or small intestine.

Observation of the cecal region is especially helpful, for if the cecum contains gas, it is not likely that the

Fig. 4.—Acute obstruction high up in the small intestine, somewhere near the junction of the jejunum and the ileum. Note the absence of gas-distended coils in the lower half of the abdominal shadow.

obstruction is in the small bowel. If the gas collections, as above described, are seen to occupy the middle of the abdominal shadow while the flanks are gas free, it is probable that the obstruction is in the lower ileum, though not so low as the ileocecal region. When the gas areas occupy the true pelvis and the middle of

Fig. 5.—Marked gastric dilatation. Acute obstruction low in the small bowel, yet a little distance above the ileocolic junction. One determines this by the distribution of the gas-distended coils. The trace of barium in the cecum remained there from a preoperative barium meal study.

the abdominal shadow, one may suspect the ileocecal region. Intussusception may be discovered by colonic injection with an opaque material. Early physical findings in these cases are very difficult to demonstrate with surety, whereas the roentgenologic findings may be demonstrated much earlier, and gain in surety as the gas distention progresses.

If the observation of the gas-filled bowel (without the ingestion of barium) does not make clear the location of the obstruction, time will be saved by proceeding at once to the administration of the barium enema to rule out colonic obstruction. If the entire colon fills, it is then recognized that the obstruction must exist in the small bowel. If the findings thus far are still indecisive, and the clinical symptoms are not yet clear, with the permission of the surgeon a small amount of barium sulphate, say half an ounce, may be administered by mouth in any medium which the patient will take. These cases are usually also so doubtful from the clinical standpoint that final decision as to operation is postponed in any case, and there is ample time for some of the barium to pass on into the small intestine. After a little experience, however, it is quite unnecessary to administer any barium at

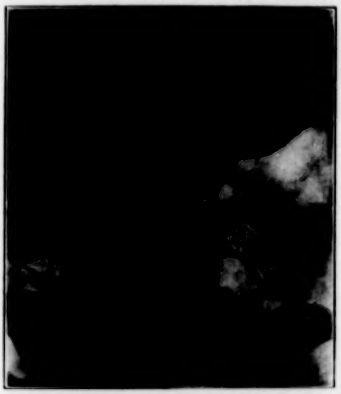

Fig. 6.—Very high grade of acute obstruction near the ileocolic junction. The dilatation of the entire small bowel in this case was extreme.

all by mouth, the decision being rendered on the appearance of the abdominal shadow with reference to the character and distribution of the gas areas which it may present.

GASTRO-ENTEROSTOMY

To Cannon belongs the credit for some of the earliest Roentgen studies on gastro-enterostomized patients. Until a few years ago gastro-enterostomy was looked on as a drainage operation, and it was the effort of surgeons to make the anastomosis as near as possible to the lowest point of the stomach. This idea was based on the conception of the stomach as a passive reservoir from which food was discharged more or less under the influence of gravity. Cannon's studies on the movement of food after gastro-enterostomy were very carefully carried out and constitute a classic to which no exceptions can be taken.

There are, however, two new points to which I should like to direct attention. It will be recalled that Cannon and Blake from their experimental work con-

cluded that the stoma should be fairly large and near the pylorus—that conditions which stretch the stomach should be avoided, and that several centimeters of distal intestine should be attached to the stomach to prevent kinking in the jejunum. But when pyloroplasty was possible, these authors thought it was the operation of choice. They found that the rapid exit of food from the stomach was prevented by the formation of rhythmically contracting constriction rings in the duodenum. They believed that this activity replaced in part the function of the pylorus and also served to mix the food with the pancreatic juice and the bile. I have observed this phenomenon in two out of four cases in which a Finney operation had been done. It is interesting that analogous phenomena were noted in a large number of cases in which the ordinary gastrojejunostomy had been performed, namely, a sort of sphincter action established in the jejunum at a point varying from 3 to 6 cm. below the gastrojejunal opening. This was at first interpreted as a spastic contraction of the circular muscle

Fig. 7.—Acute obstruction in the small intestine in which the decision to operate was not made until the second examination, six hours after the first. Meanwhile a small amount of barium had been given, and the characteristic appearance of the small bowel visualized.

of the jejunum; but in the light of Cannon's observation on rhythmic contractions of the duodenum after pyloroplasty, it seems reasonable to conclude that this contraction ring in the jejunum is purposive, serving somewhat as a sphincter.

Kocher years ago made the statement that the gastro-enterostomy opening developed a sphincter action and actually underwent rhythmic contractions. It seems possible that the formation of a contraction ring in the jejunum below the site of operation may well simulate the normal action of the pyloric sphincter. Under the fluorescent screen, one sees a small fingerlike shadow gradually build down behind the gastric silhouette, simulating very much the formation of pseudopodia in the ameba. This fingerlike shadow projects farther and farther until it is suddenly constricted off an inch or two below the stomach, the pinched-off bolus passing onward into the distal small bowel, the proximal portion remaining and gradually assuming larger proportions until the distal portion of it is again pinched off by succeeding contractions. In other words, this action has in a certain degree seemed to take the place of the rhythmic contraction normally occurring at the pylorus.

A second new point relates to a stagnation of food

Fig. 8.—Three years after ileosigmoidostomy. The arrow indicates the site of the anastomosis. Appearance of the colon forty-eight hours after barium meal. The colon is filled by material carried backward from the rectum by retrograde peristalsis. This retrogression of food residues often forms large cecal tumors.

in the jejunum at or near the site of the gastro-enterostomy. Cannon, with F. T. Murphy, made intestinal resections in animals, uniting the severed intestine either by end-to-end or by lateral anasto-

Fig. 9.—Even after removal of the right half of the colon, including the first third or half of the transverse colon, there is a tendency to the formation of a tumor in the proximal end of the remaining large intestine. In this case the barium-mixed residues in the stump are shown on the ninth day following the meal, forming an easily palpable tumor.

mosis. After lateral anastomosis, there occurred a more or less complete blocking of the canal by undigested detritus at the opening between the opposite

loops. Necropsies on animals proved that the stasis was not due to previous accumulation of undigestible waste, but that the two apposed coils did not cooperate to propel the enclosed food, and that after an ordinary meal, food was stagnant in the region of the anastomosis. It has seemed to me that the same phenomenon is also observed after gastro-enterostomy. Especially

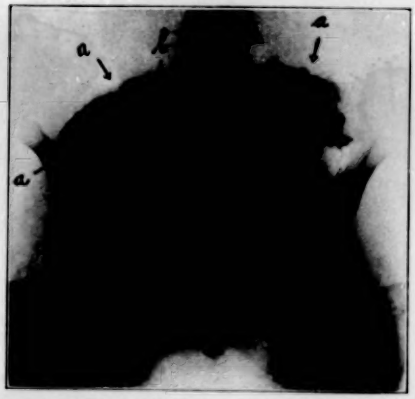

Fig. 10.—This backing up into the short-circuited colon takes place constantly, and begins immediately after food reaches the rectum. This roentgenogram, twenty-six hours after eating, shows at *a* the backed-up material in the transverse colon and cecum, and at *b* a large residue still remaining in the terminal ileum. The bowels had meanwhile moved satisfactorily (?) several times. (See Figure 11.)

toward the end of gastric clearance, there occurs a stagnation, apparently in the small bowel, at the site of the anastomosis, this stasis being accounted for by the inhibition of onward peristaltic activities at this point (Fig. 1).

APPENDECTOMY

A common cause of cecal stasis is adhesions, usually associated with disease of the appendix. It is also a fact that immediately following recovery from the operation of appendectomy, there is in the majority of cases a considerable degree of cecal stasis. The cecum retains portions of the barium meal for from two to four days, and sometimes more, although the remainder of the colon may clear itself normally. Following the attempt to expel the barium enema it is seen that the cecum has failed to contract, the propulsive ring peristaltic waves which evacuate the large bowel commencing at or above the ileocolic junction instead of at the tip of the cecum. Even at a remote period after the operation, several years later, a certain degree of cecal stasis persists in a considerable number of cases, a rounded residue of barium the size of a 25-cent piece remaining in the cecum after the colon has otherwise been entirely cleared of the barium meal. This is especially likely to occur where the patient complains of a tenderness over the cecum. Sometimes this cecal stasis was present before the operation, as shown by the preoperative Roentgen records; but that it often exists after operation where it did not exist before is convincingly shown by our series. I believe that the rounded barium residue, above referred to, occurs at the site of the stump of the appendix, and that it has some relation to the invaginating suture by which in the technic commonly employed the stump is buried. The coincidence of a point of localized tenderness on pressure with this rounded residue at the site of the appendix stump would suggest the desirability of including the least possible amount of cecal muscularis in the invaginating suture.

ILEOCOLOSTOMY

I have been especially fortunate in having been able to study a large series of cases after ileocolostomy performed for adhesions, ileal stasis, Lane's kink of the ileum, and other nonmalignant lesions. Forty such cases have been examined very carefully, operation in most of them having been performed according to the technic advocated by Lane, one of them by Lane himself. Not all the patients in this series were clinically failures, though the majority of them were examined for the cause of an unsatisfactory result. In most of them, during the early months following operation, the result was apparently worth while, and in a few striking instances the operation had seemed to work like magic; but sooner or later, usually within a year after the surgical procedure, the symptoms have begun to recur and the patient's last state is worse than the first. It should be remembered that this series of cases represents the work of more than a dozen different surgeons, most of them of national reputation—work which I believe to be on the whole representative of the best in technic which this country affords. The unsatisfactory results can, therefore, hardly be attributed to poor technic.

Fig. 11.—(See Figure 10.) The very marked distention of the coils of terminal ileum attending the marked ileal stasis in some of these cases is illustrated by the colon injection. Same case as in Figure 10. The arrows point to distended small bowel, the seat of stasis in Figure 10.

Excepting only those cases in which an artificial ileocolic valve has been formed, all cases have shown incompetency of the ileocolic stoma permitting the enema to flow back into the small bowel as well as retrogradely around the colon to the cecum or as far as the stump of the colon in those cases in which partial colectomy had been performed. The small bowel thus visualized has displayed a variable caliber,

not much enlarged in the recent cases, but frequently so large as to be confused with the colon itself in patients examined two or three years after the operation. In some of the roentgenograms it is impossible to tell definitely from the roentgenogram alone which shadows are colonic and which are ileac. Of course, it is recognized that the test by enema reverses the

Fig. 12.—Another case two years after ileosigmoidostomy. Colon injection. Note the very marked dilatation of the small bowel shown at *a*, whose caliber equals that of the neighboring colon shown at *b*. There was marked ileal stasis in this case, shown after the barium meal. In cases of ileosigmoidostomy examined shortly after the operation, there is noted a similar insufficiency of the ileocolic orifice, but the coils of terminal ileum do not exhibit the same degree of dilatation until later.

usual order of progress of the food column, but there is also noted in many of these cases a regurgitation of *ingested* food. There is a very definite ileal stasis in most of the older patients (operation performed a year or more before the examination). It is not uncommon to find at the twenty-sixth hour a large mass in the terminal ileum simulating a colonic residue in size and caliber of the coils. The worst cases of ileal stasis, judged by the retention in the ileum of a mass of ingesta, are those cases which, when tested by the enema, show the greatest ileal dilatation and the most extensive ileal filling by the passage of the enema through the anastomotic opening. This incompetency of the stoma to enema and the ileal stasis should both be prevented by the formation of an artificial ileocolic valve by Kellogg's method. In one case reexamined three years after the operation just referred to, the artificial valve still prevented the reflux of the enema, and there was no ileal stasis.

Following the barium meal, there has been noted in every case, without exception, retrograde peristalsis carrying barium oralward as far as possible from the rectum. This regurgitation commences immediately after food reaches the rectum, and the head of the backed-up column has usually reached the splenic flexure by the tenth or twelfth hour. This retrograde movement of ingested material persists in spite of repeated enemas and in spite of repeated bowel movements, so that by the end of the twenty-sixth or even the fiftieth hour, the residues are banked up in the proximal colon, from which it is very difficult to dislodge them. I have seen a large barium-mixed mass in the cecum on the fourteenth day forming a tumor in the right inguinal region, easily palpable and visible on inspection of the abdomen. Hauchamps has recently reported a case of a nervous woman of 26 years, who had suffered all her life from obstinate constipation. To give relief some surgeon made an appendicostomy, to facilitate colonic lavage. Later the patient was reoperated, the appendix being removed and the right kidney being anchored. Still later, the patient failing to improve, ileosigmoidostomy was performed. A month after the last operation the patient was given a barium meal. There occurred evident retrograde peristalsis with the formation of a large barium-mixed fecal mass in the right inguinal region, which was still visible both on inspection of the abdomen and roentgenologically on the thirtieth day, although no opaque salt had been administered meanwhile. This stasis in the excluded colon is usually attended by the formation of distressing amounts of gas, which sometimes distend the colon to enormous proportions, resisting all efforts to dislodge it. Gas distention of the colon after ileosigmoidostomy often distorts the stomach in such a way as to produce a pseudohourglass appearance. Efforts to prevent the retrograde procession by making a kink in the sigmoid just proximal to the anastomosis result only in greater stasis and greater difficulty in dislodging the stagnant material, which is only slightly delayed in its regurgitation.

It thus appears that in a very considerable percentage of cases in which the operation of ileosigmoidostomy is performed for the relief of intestinal stasis, particularly ileal stasis, the end-result is infi-

Fig. 13.—In performing the operation of ileosigmoidostomy, it is possible to make an artificial valve at the new opening, by Kellogg's method. In the case here figured, the right half of the colon had been removed, the ileum being inserted into the sigmoid with the formation of an artificial valve. The enema failed to enter the ileum. There was no ileal stasis following the meal. There was marked stasis in the blind portion of the remaining colon; *a*, stump of transverse colon; *b*, site of ileocolic junction.

nitely worse than if the patient had not been operated on, at least so far as the ileal stasis and the patient's comfort are concerned. As before suggested, there is often a period of improvement, sometimes marked; but ultimately the majority of the patients under our observation exhibit a recurrence of the stasis.

To avoid a recurrence of the ileal stasis, Kellogg has endeavored to make an artificial ileocolic valve, hoping to prevent the regurgitation of food residues back into the ileum and to lessen the ileal delay. This operation, which results in the formation of a valve-like invagination of the terminal ileum into the colon in a manner resembling the formation of the normal ileocolic valve of the pig, is accomplished by a modification of the ordinary technic for end-to-side ileosigmoidostomy. In twelve cases the valve thus formed has worked satisfactorily in seven, the five failures occurring early in the series. Even in those cases in which the effort to make an artificial valve failed, the patient was no worse off than if the ordinary anastomosis had been performed. When ileocolostomy must be performed, it seems distinctly worth while to attempt the production of an artificial one-way valve, simulating the normal ileocolic junction.

To obviate the retrogression of rectal contents back into the excluded colon in these cases of ileosigmoidostomy, a number of surgeons conceived the idea of resecting the right half of the colon, including the cecum, the ascending colon and a part of the transverse colon. This operation preserved the omentum and saved the patient much of the shock likely to attend removal of the colon down to the sigmoid. In all the cases thus operated in which the patients have come to me for postoperative study, there has been demonstrated the same retrogression of colonic contents with the formation of an obstinate residue in the blind end of the stump of colon, this residue in several cases forming a palpable and visible tumor, persisting many days. In one case this tumor persisted longer than nine days, in spite of repeated daily enemas and the use of laxatives. The severity of the stasis in the stump of the colon has a relation to the length of time which has elapsed since the performance of the operation, becoming progressively worse as the months go by.

The operation of cecosigmoidostomy was also proposed as a procedure which would obviate the distresses attending the retrogression of materials up the colon under the influence of antiperistalsis. This operation appears to me an illogical and unreasonable procedure in these cases. In one instance in which it has been impossible to secure a reexamination by means of the Roentgen ray, the reports from the patient are fairly satisfactory; but in the other cases examined at some interval after the operation (three cases), there has been seen a double procession of food residues, one column traveling up the ascending colon in the normal direction and the other up the descending colon, the two columns tending to meet near the middle of the transverse colon. My friend, Dr. L. T. LeWald, who has studied such a patient two years after operation, has kindly communicated to me his Roentgen findings:

> The intra-abdominal distress and the constipation were relieved for a time, but the symptoms recurred within two years and the constipation became extreme. The bowels never moved without enema, and the gas distention of the abdomen was very distressing. Roentgen studies after a barium meal showed most of the meal going in the direction of the hepatic flexure and transverse colon instead of through the cecosigmoidostomy opening. At the end of twenty-four hours the transverse colon was filled, only a little having passed from the cecum through the artificial opening. By the end of the second day only a trace of the meal had been eliminated, the greater part remaining in the cecum, ascending colon and the transverse colon. Seventy-two hours after the meal and after repeated enemas, it appeared that the elimination of the barium-mixed residue was almost impossible, the appearance suggesting a definite vicious circle. As some of the barium passed down the descending colon and began to enter the sigmoid, it appeared to enter the cecosigmoidostomy opening into the cecum, and thence through the ascending colon back into the transverse colon. Only a small portion remained in the rectum and was voided.

The next class of cases includes those in which it was not deemed advisable to subject the patient to an extensive colectomy, and yet radical treatment was demanded. It was finally decided to make an ileocolostomy with partial colectomy, that is, resection of the right half of the colon followed by insertion of the ileum into the transverse colon as near as possible to the stump. In our Roentgen studies as well as in our clinical observations in these cases, this type of operation has given the most satisfactory results. Thus far, it would appear, both clinically and from the Roentgen findings, that this type of operation is preferable where any operative procedure at all seems indicated for stasis in the right half of the colon. Of course, for a lesion in the pelvic colon such an operation would not be likely to afford any improvement of the condition.

It would thus seem that when for any reason it appears necessary to resect a portion of the colon, making a new ileocolic junction, the ileum should be implanted as near as possible to the proximal end of the remaining portion of the colon, and an effort should be made to produce an artificial ileocolic valve. Exclusion operations are invariably followed by stasis in the excluded intestine, and blind ends, as after ileosigmoidostomy with or without partial colectomy, always sooner or later become the seat of stasis, usually with the formation of distressing amounts of gas which cannot be dislodged without great difficulty. The production of a serviceable artificial ileocolic valve by Kellogg's method is quite feasible, and in the majority of cases it is successful.

THE USE OF PLASTER OF PARIS IN MOUNTING GROSS MUSEUM SPECIMENS

WITH SPECIAL REFERENCE TO PARASITIC WORMS AND SERIAL TISSUE SLABS *

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For several years I have had more or less to do with the mounting and maintenance of gross morbid museum specimens, a large number of which were especially prepared for student-instruction purposes in large medical schools.

Suspended in the usual way by ligatures on glass frames, and after handling several times in the course of a year by instructors and students, these specimens have suffered, entailing much loss in time and some of material in repair. If of soft texture (liver), the threads have torn out, if necrotic the detritus has fallen out, and the glass frames are sometimes broken by shaking when the specimen is handled by students. If the mounting medium has become turbid, a more or less thick layer of nontransparent material

* From the McManes Laboratory of Pathology, University of Pennsylvania.

intervenes between the eye and the specimen. Or, where the specimen is small (parasitic worms) and fastened to a glass slide by gelatin, the latter has in time lost its adhesion and the specimen dropped to the bottom of the jar.

Of late, therefore, I have aimed in the first place to prepare all specimens so that the important feature to be exhibited will appear on a broad plane surface, and will fit snugly or tightly into the container. This end is most easily accomplished when dealing with slabs of tissue (liver, spleen, tumors) which can be cut to almost any desired shape, and where a variety of variously sized and shaped containers is available. Under these circumstances, no special backing is needed. If, in the second place, the specimen has a flat surface, but is much thinner than the container, it may be held against the face of the container by some special backing, and it is with the preparation of such backings that this communication has especially to deal. Of course there are many specimens which will not permit such treatment because it might hide important features on the opposite side of the specimen, and here the older methods have to be used.

The merits of this method are obvious. In bringing the specimen close to the eye, no fluid is interposed to become turbid or distort (especially in cylindric containers) the specimen. It matters not, indeed, so far as the specimen is concerned, if the mounting medium does become turbid. The specimen, furthermore, is held rigidly, permitting marking of the face of the container to indicate special points, and preventing the loss of soft necrotic parts. It is especially valuable in supporting (and partially embedding) slabs of brain.

Fig. 1.—Consecutive slabs of brain, largely embedded in plaster of Paris, showing position and extent of cerebral hemorrhage.

The choice of an appropriate backing material is most important. Absorbent cotton has been used for a long time and is often most satisfactory. It has the disadvantage of not giving a rigid support unless very tightly packed, and then it is not sightly.

In my hands, plaster of Paris, while not ideal, has proved of great value.

Where the tissue is soft and will not stand pressure (serial slabs of brain are especially amenable to this method) it is arranged face downward on a smooth soaped surface. A wall is built around it enclosing a space about 1 cm. larger than the inside dimensions of the face of the container, which must be rectangular for the proper use of this method, and the inside of the walls now also soaped. Plaster of Paris is poured over the specimen until it is of depth equal to the narrowest anteroposterior dimensions of the container. As soon as the plaster has hardened, which ordinarily occurs in from fifteen to thirty minutes, the walls are torn down and the slab of plaster, with contained specimen, lifted from the glass. While it is still moist the edges are neatly trimmed with a knife until the slab slips snugly into the container. It is allowed to harden further, say for several hours, a moistened cloth, if necessary, being kept over the face of the specimen to prevent undue drying out. The whole is then gently slipped into the container and covered by mounting fluid. It should not be at once sealed, since bubbles will accumulate for several days, and these must be brushed off with a feather before final sealing. In the course of a year the tissue may slightly shrink from its embedding walls, but this is of no moment since it is held in place by the face of the container anteriorly and is always supported below by a plaster base. Indeed, it may be considered an advantage, permitting the inspection, though very limited, of the sides of the tissue slab.

When the tissues are firm, they need not be thus embedded, but are pressed against the face of the container by a plaster backing acting against the back of the specimen. On account of the formation of bubbles on the plaster, it has been found advisable to make up a number of containers holding their backings and keep them in stock in weak formaldehyd (2 per cent.) until needed, the bubbles being meanwhile removed from time to time.

Either rectangular or cylindric containers may be used. Most rectangular ones, however, are unsatisfactory on account of their irregular interiors, commonly flaring out toward the bottom, which quite prevents subsequent removal of the backing. This is sometimes also the case with round containers, especially the ones with necks. Where this is the case, a layer of plaster may be poured in until the "flare" is filled and allowed to harden. The backing may then be made as though there were no flare. The most suitable containers are cylindric ones (though necked ones may also be used), for then the backing may be later removed from the container, neatly trimmed, and the specimen be exactly arranged on it. This is especially desirable with long slender worms like filariae or numerous small worms like hookworms.

The containers receive about one quarter to one third of their capacity of thin plaster-of-Paris cream. It is aimed to insert such an amount that, after the container has been laid horizontally, about one third of the circumference will be covered by plaster. Where there has been a basal flare which has been filled previously by plaster, it is necessary first to soap its surface before pouring in the backing. In the case of

necked containers which have ground stoppers, the stoppers (soaped) are now inserted and the containers laid horizontally. In the case of cylindric ones with loose-fitting lids for cementing, cork or rubber stoppers are inserted (also soaped), which will reach well (about 5 mm.) below the point to which the lid will reach. If this distance is not allowed, fluid will later pass by capillarity from the backing to the lid and interfere with sealing. As soon as the plaster has hardened sufficiently (from fifteen to thirty minutes), the stoppers are removed and the containers set upright. If the margins of the backing are uneven, they may be easily corrected now while the container is full of water, and after a few hours the backing may be easily pried or will spontaneously fall away from the face of the container. It is well to mark the original position of the backing by applying a label at its base, for after loosening it will slip freely around the jar, and it is desirable on account of the irregularity of the jar to be able to return the backing to its original position. This is not an important point when dealing with larger worms, but when they are small and delicate they may fail to be nicely gripped between the backing and the face if the two are not thus accurately adapted. It is between the convex surface of the backing and the concave interior of the face that the specimen is to be placed and then held there by pressure, the pressure being given by packing cotton behind the backing.

Since a dark background is often desirable, a rectangular piece of black photographic paper is fitted over the convexity of the backing sufficiently large to cover it well and hide it, and the whole stood away in weak formaldehyd until needed.

If the specimen is dark, the black paper is withdrawn and discarded, the glistening white backing affording a splendid background. If pale, the paper is brought over the label marking the original site of the backing. In either case the backing is brought over the label, and a pledget of wet absorbent cotton gradually pushed behind it to the bottom of the container, sufficiently large to push the backing snugly but not tightly forward to the face and anchor it. The introduction of excessive quantities of air bubbles with the cotton should be guarded against.

While the cotton anchors the lower end of the backing, the upper end is pulled away from the face of the container, thus producing a (curved) wedge-shaped space between the backing and the face of the container. Into this the worm (or other specimen) is introduced and adjusted in the desired position on the background, the thickness of the wedge being adjusted to the size of the worm by packing cotton behind the backing. After the worm has been oriented, more cotton is inserted to fix the specimen securely, the fluid reduced to the level of the upper end of the backing, and the jar closed.

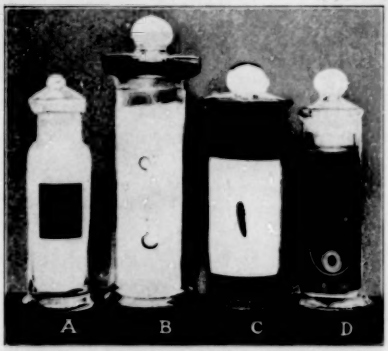

Fig. 2.—Parasitic worms mounted against plaster-of-Paris background: *A*, hookworms shown against a black paper "window," which in turn is supported by a plaster-of-Paris backing. Shows use of necked container. *B*, whipworms mounted against plaster-of-Paris backing. *C*, insect larva mounted in depression. Passe-partout tape wound around container above and below, to give finished appearance. *D*, filariae mounted against black paper background, in turn supported by plaster backing.

It will be readily seen that this manipulation is much easier with cylindric containers than with necked ones. When the latter *must* be used or several rather small specimens (hookworms) are to be mounted, it is advisable first to coat lightly the (wet) paper backing with hot gelatin outside the container, and quickly and lightly press the worms into the desired positions. After cooling, the paper is adjusted as before on the backing. When the specimens are sufficiently small this background may be made very small, say 2 by 1 cm., appearing on a white background as a black paper window on which the white worms in turn appear.

The foregoing method is especially applicable in mounting all kinds of worms, except the thicker soft ones, such as the Amphistomidae. The latter should be mounted, as are also larval insects and other thick, soft specimens by the following modification: A cylindric jar must be used, from which the backing can be slipped. This done, a cavity is made in the backing which will take the specimen snugly and will be deep enough to receive the whole specimen. If it is pale, a black paper background may be fastened to the depths of the cavity with hot gelatin. The specimen is placed in the cavity, and the backing slid over the face of the container into position and then held there tightly by cotton as before.

If an especially presentable mount is desired, one or two strips of black passe-partout paper may be wrapped on the outside of the container at the top and bottom to hide the water level and the ends of the backing or background.

This method has possible disadvantages. It is possible to pack the cotton so tightly as to flatten the specimen unduly, and it is possible that the paper may lose its deep black color in time. Black celluloid has been substituted for paper, but a sufficiently thin grade is not on the market to permit the nice adaptation to the irregularities of the glass necessary in mounting very small specimens; but it can be used with larger worms like ascarids. The test of time has not as yet been applied to these two materials for color fastness. Attempts have also been made to color the backing by mixing lampblack or coal dust in the plaster while wet, but quantities sufficient to give a deep black impair the cohesion of the plaster so seriously that it spoils the mounting medium. Portland cement is a most unsatisfactory substitute for plaster. It does not give a good black, sets slowly and cannot be easily fashioned.

Special advantages obtain when the method is applied in mounting worms. They are not damaged by immersion in an adhesive or ligating material, and

can be removed easily at any time for microscopic examination.

In conclusion, a word may be said in regard to the use of plaster of Paris. This is purchased, "quick setting" and "slow setting"; the former sets in about five minutes, the latter in twenty. Setting may be hastened by adding salt, retarded by adding a little gelatin. In mixing plaster, it should always be sprinkled on the surface of the water, never adding so much that the surface of the mixture becomes dry. Water should never be poured into dry plaster. The plaster should be allowed to settle from five to ten minutes, during which time a layer of water appears on the surface. This is poured off and the mixture *gently* stirred. These precautions are taken to prevent lumpiness and the formation of bubbles, which result from much stirring. Prepared in this way, the plaster is of the proper consistency for pouring, and is free from bubbles.

JUVENILE DEFORMING OSTEOCHONDRITIS OF THE HIP*

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My reason for presenting a paper on this subject lies, first, in the newness of knowledge concerning it, only two years having elapsed since Perthes' article before the German Congress of Surgeons; and secondly, in the importance of recognizing the disease, and of saving our little patient from a wearisome course of treatment for tuberculosis of the joint, to which, in its early stages, osteochondritis shows a close resemblance, but in its later stages, a vast difference.

To define briefly, juvenile deforming osteochondritis (the name given by Professor Georg Perthes of Tübingen) is a progressive destruction and crushing, principally of the upper femoral epiphysis, characterized by a slight limp, mild subjective symptoms, a fairly constant limitation of abduction, and a benign course with complete recovery under little or no treatment.

* Read before the Section on Orthopedic Surgery at the Sixty-Sixth Annual Session of the American Medical Association, San Francisco, June, 1915.

ETIOLOGY

A history of limping by parents is only occasionally elicited, and would hardly seem to have any significance. The disease appears when the child is in good health, and is not especially concerned with any specific trauma, although in two of our three cases, mild injuries were associated with the onset.

Quite constantly boys are affected in the second five years of life. No explanation has been offered for this phenomenon, although one might presume that the strenuous exercise of the male animal at this time of his life might produce a constant strain and tend to a breaking down of the structures in consequence, when no one tissue was at fault.

SYMPTOMS

A slight limp is the obvious symptom. This occurs early and persists till late, becoming more and more intermittent, and is accompanied by slight or no pain. The limp may last from two to four years, says Perthes, and then lessens, in spite of greater destruction of the epiphysis, as seen in successive roentgenograms.

The symptom next in importance is the elimination of abduction, seen constantly, and persisting much as the limp does. It is marked at first, and is due to alterations in shape of the epiphysis and acetabulum, according to Perthes, although he admits that limitation of abduction may be well developed when the flattening of the epiphysis is slight. Under narcosis he could overcome the limitation to a great degree, although not altogether, showing that muscle spasm played an important rôle. This was done in one of our cases with a similar result.

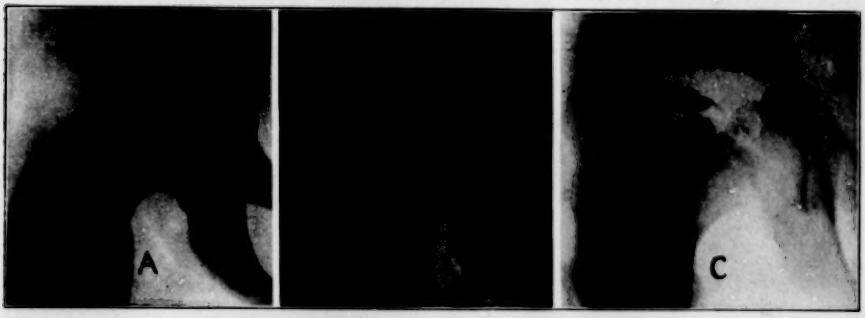


Fig. 1 (Case 1).—*A*, roentgenogram taken at first visit, showing very slight flattening of the epiphysis; *B*, ten months later; *C*, nine months later than *B*, showing fragmentation as well as flattening.

Also rather constantly is reported a limitation of in or out rotation to a slight extent. Other motions are said to be unimpaired, although in two of our cases we found limited hyperextension.

Slight shortening and atrophy are occasional symptoms of lesser note.

Pain is almost a negligible factor, and in these three cases none was elicited by our examinations. There was an occasional complaint of spontaneous pain in the early stages.

PATHOLOGY

According to the studies of Perthes, including an arthrotomy, in which the joint was inspected and

specimens removed for microscopy, there is a delay in ossification of the cartilage of the epiphysis, and to a lesser extent also in the juxta-epiphyseal cartilage of the neck and isolated areas in the acetabulum. This forms what he calls "cartilaginous isles," or defects in ossification. He also notes calcareous nodules or dark spots on the ossific nucleus of the epiphysis. As a result we have flattening or crushing of the epiphysis, because cartilage persists in places where bone is needed to bear the increasing weight of the growing child and withstand the traumatisms of a boy's rough play. Its shape also is a factor in this connection, for Quain says, "The epiphyseal cartilage in the young bone is not a flat plate situated at the junction of the head and neck, but an arched lamella, which at the summit of its convexity lies near the center of the articular head."

Later the flattened epiphysis breaks into two or three pieces, and finally unites to the neck, which has become much shorter and thicker than normal, although still preserving the normal angle.

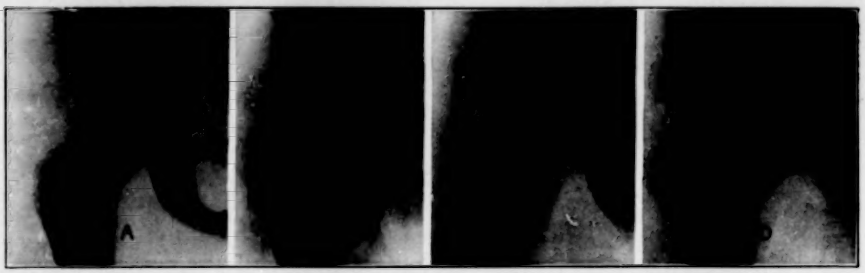


Fig. 2 (Case 2).—*A*, condition at first visit; flattening well marked; *B*, five months later; continuation of process; *C*, six months later; fragmentation appearing; *D*, seven months later, fragmented sections fusing to diaphysis.

ROENTGEN-RAY FINDINGS

These are so distinctive that Delitala,[1] in an exhaustive review, asserts that a Roentgen examination alone is sufficient for the diagnosis.

The flattening or crushing of the epiphysis is the salient feature. This is progressive, being slight at first, and increasing till the epiphysis, instead of being a rounded outline, is reduced to a flattened plate or disk, often divided into two or three parts. Later these appear to fuse, and the whole finally unites to the diaphysis. The cartilaginous isles mentioned above as appearing in the juxta-epiphyseal line and in the acetabulum are sometimes seen in good roentgenograms.

DIFFERENTIAL DIAGNOSIS

Here we must consider tuberculosis, juvenile deforming arthritis, polyarticular acute arthritis or rheumatism, coxa vara and osteomyelitis.

To distinguish it from tuberculosis we can place considerable reliance in the von Pirquet test, in the clinical examination showing the principal limitation of motion in abduction, a little in internal rotation and none in other directions, as opposed to tuberculosis, which usually shows some limitation in all directions. The lack of pain or joint spasm is another point, while the roentgenogram, showing none of the general rarefaction of tuberculosis in the early stages, in the later offers conclusive differences in the shape of the epiphysis.

Juvenile deforming arthritis is accompanied usually by joint crepitation, the pain is quite severe, and there is considerable stiffness and marked limp. The von Pirquet test should help, and the roentgenogram sometimes resembles Perthes' disease closely as to the crushing of the epiphysis, but often shows osteophytes or spurs, which osteochrondritis does not. Furthermore, the joint cartilage is intact, a point emphasized by Perthes.

In coxa vara the roentgenogram and the von Pirquet test are our only means of differentiation; but they should be quite sufficient. Clinical examination and history may fail us altogether.

In acute articular arthritis we have acute onset, much pain and disability, limitation of motion in all directions, fever, etc. The roentgenogram would show no change.

Acute osteomyelitis should present no difficulty. In chronic or healed osteomyelitis, reliance should be placed on the history and Roentgen findings.

TREATMENT

Perthes, with the widest experience of any one, concludes that operation is not indicated, that correction of abduction under anesthesia may be a good procedure, and that plaster spicas do no harm beyond inducing some atrophy, but that extension with massage is probably better.

I cannot agree with Delitala, who thinks that weight bearing has nothing to do with the crushing of the epiphysis, and that intimate alteration in the process of ossification is the only factor. Until we know the pathology absolutely and definitely, the child should be protected from weight bearing in the acute stage, but in the later stages allowed to run about regardless of the apparently alarming changes the Roentgen ray might show, as all cases run a benign course and tend to spontaneous recovery.

Perthes reports five cases seen from five to thirteen years after onset. The history and course were typical, although thought at that time to be tuberculosis. The uniform result was a broad flat head on a short thick neck, resembling coxa vara. There was a constant slight limitation of abduction. Otherwise functions and motion were restored. There was no pain or limp.

1. Delitala: Am. Jour. Orthop. Surg., 1915, xii, 555.

During the last two years Dr. Sherman and I have observed three examples of this disease, with histories as follows:

CASE 1.—B. F., boy, aged 3½ years, seen first by us in July, 1913, came from a family in which the parents and older children had never limped; his infancy had been normal; he had had pertussis at the age of 1½ years. He complained of pain in the left knee at the time of a fall six weeks before first seen; he limped a little and got better. Again five days before the first visit he twisted the left foot and leg; he heard a snap, and then had pain and difficulty in walking. At the first visit he walked with a decided limp, but on the table had free joint motion, except that the heel would not go so high into the opposite scarpa as normal. Two days later, when reexamined, the limp had disappeared. The von Pirquet was negative. The boy was not seen for ten months, during which time he had intermittent soreness and would limp for a few days. He then showed no limitation of motion or limp, but the roentgenographic changes were marked. Wassermann negative, normal thymus, genitalia, hemoglobin 75 per cent. In April of this year he was seen again. In the eleven months' interval he has had five or six limping spells, each lasting a day or two, accompanied by slight hip pain; the attacks lessened in severity, the last one occurring in September, 1914.

The parents say he has a tendency to stumble because he will not lift the foot so high as the right one, and is a little clumsy in running. Examination shows 40 degrees' abduction, as against 45 in right. Five cm. atrophy midthigh; hyperextension normal; no shortening.

No treatment was given.

CASE 2.—L. W., boy, aged 6½, was first seen in December, 1913. The parents had never limped; the child was healthy as a baby; he had had pertussis and roseola, both lightly; he commenced to limp six months before the first visit, and complained of pain in the left knee, not enough to stop play. When seen in the office, he had no limp and no limitation of motion. Tonsils were removed, although no Rosenow bacilli found. A month later he had no limp, but only 14 degrees abduction were permitted, and slight limitation of hyperextension.

Von Pirquet and 2 mg. Koch's Old Tuberculin were both negative. Wassermann was also negative.

The child was put in spica and on crutches to protect the joint. This was continued four months, when the abstract of Söderlund's article[2] induced us to remove the spica and consider the condition as therein described.

The course of the disease since has been quite typical. The parents have endeavored to make him use crutches, but he is as apt as not to discard them when at play, the joint being absolutely without pain.

CASE 3.—B. C., boy, aged 7, seen first in May, 1914, with no history of limping, had whooping cough and measles lightly in infancy, but no other illnesses. Limping commenced after a fall from a tree, and the boy complained of pain in the groin. He limped a little, steadily, for three months, and then was placed under our care. We found only 15 degrees' abduction permitted, with limited rotation and hyperextension. Roentgenoscopy revealed marked flattening of the epiphysis. The von Pirquet and Wassermann tests were negative. In three weeks, the adduction and other joint restrictions being on the increase, an anesthetic was given, the adduction overcome, and a plaster-of-Paris splint applied.

At the end of seven months, or last March, there being abduction of 35 degrees, with free joint motion, splint treatment was discontinued, in spite of the increased flattening of the epiphysis, as shown in roentgenograms. Since March he has been kept on lift and crutches, although without them he has a slight limp, because of restricted motion; he has a little fulness over the neck of the femur; 25 degrees' abduction are permitted, and two-thirds normal rotation.

He has had no pain since the fall from a tree when the symptoms began.

These three histories and accompanying roentgenograms are quite typical of the syndrome brought into prominence by Perthes two years ago. Keeping it carefully in mind will save a small percentage (Delitala saw six in 1,500 cases of coxitis) from the dreaded diagnosis of tuberculosis. To us also will be given the satisfaction of making a definite advance in the scientific accuracy of our diagnoses.

One should also consider that other joints may be similarly affected. Ridlon,[3] two years ago, before this section reported two cases of osteochondritis dissecans, producing defects in the cartilage of the knee, resulting in small free bodies in the joint. Other rare and little understood joint affections may in time be grouped under a common pathology, having as the salient feature an inflammatory defect, a breaking down or delayed ossification (as in Perthes' disease) of the cartilage.

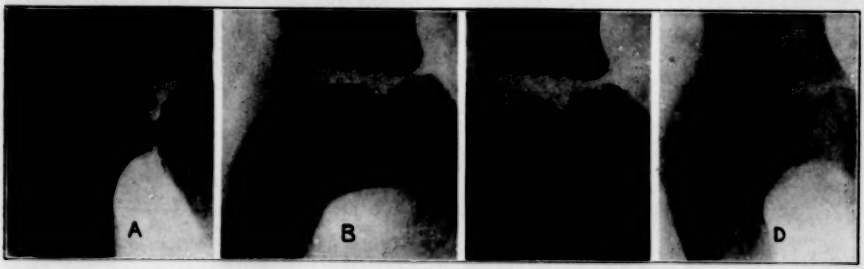


Fig. 3 (Case 3).—*A*, flattening well marked at first visit; *B*, after five months; continuation of process; *C*, five months later; fragmentation appearing; *D*, three months later; continuation of process.

350 Post Street.

ABSTRACT OF DISCUSSION

DR. H. M. SHERMAN, San Francisco: The cases were of interest to us because we had read of the condition before we found it in one of the children. The diagnosis must be made primarily, because an inaccurate diagnosis might cause one to put the child into a splint for a long while when it

2. Söderlund, G.: Nontuberculous Hip Joint Disease in the Young, Upsala Läkaref. Förh., 1914, xix, Nos. 2-3; abstr., THE JOURNAL A. M. A., May 2, 1914, p. 1444.

3. Ridlon, John: Osteochondritis Dissecans, THE JOURNAL A. M. A., Nov. 15, 1913, p. 1777.

might not be really necessary. The local diagnosis, apart from the general one, can be made on two bases: first, on the clinical examination, in which one does *not* find the typical symptom of a hip joint tuberculosis, and second, by means of a roentgenogram. These two things, with a negative von Pirquet and a negative Wassermann, should serve to establish the character of the condition. We intended to treat all of these children without any splints at all after we had made our first diagnosis, but one of them evidently was suffering a certain amount of irritation in the neighborhood of the joint, which caused a reaction that impeded motion. We thought that needed protection, so that it was put into a spica which held the hip still for a certain length of time until we could safely take it off. Since then the patient has been without splints. We have not had opportunity to watch the patients far enough into life to know what the ultimate result will be.

Dr. Haas' paper, it seems to me, comes in here with great usefulness in the experiments which he made on the results of interfering with the circulation in a bone. I refer to the case in which he showed us two pictures in which there had been interference with the growth of a metatarsal bone following an interference with the circulation outside the bone. It would look as if that might be the case in these children with osteochondritis at the hip. If there has been an injury, that might be credited with having interfered with the circulation sufficiently to change development processes. If there has been no history of an injury—and of course one cannot always get a history of all the falls that a child has, because a child cannot tell—if there has been no history, it would not be unreasonable to suppose that every child falls more or less, and that an injury had occurred, in spite of there being no record of it. Experimental work would be difficult, except on animals in which the anatomy was so well worked out that you could tell just where each artery was going; but experimental work should promise an answer to questions of etiology.

A CASE OF STRAMONIUM POISONING

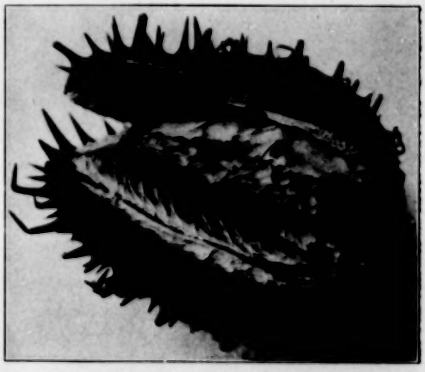
WILLIAM D. McNALLY, A.B., CHICAGO
Chemist, Cook County Coroner's Laboratory

M. R., a strong healthy boy, aged 7 years, died suddenly Nov. 29, 1914. Part of the stomach contents, consisting of 130.5 gm. of poorly masticated food, mostly vegetables, was submitted to me for examination. About twenty small kidney-shaped seeds about 2 mm. long and 2.5 mm. wide, of a brown color, were found unbroken in the food. From the stomach contents which contained broken seeds, 2.2 mg. of an alkaloid were extracted which gave a purple violet with Vitali's test. A drop of a solution containing about 1/500 grain in 1 c.c., was dropped into the right eye of a cat and compared in a half hour with the left eye, when a marked dilatation was noted. An amorphous precipitate was obtained with hydrobromic acid saturated with bromin. The precipitate became crystalline after standing, was insoluble in acetic acid and only sparingly soluble in hydrochloric acid. From the foregoing tests and the physical examination of the seeds, I concluded that the boy had eaten the seeds of the *Datura stramonium*, containing atropin and hyoscyamin.

At the home of the boy I obtained a "thorn apple," a four-valved, four-celled capsule thickly covered with sharp spines containing numerous seeds of the same appearance as those found in the stomach contents. A chemical and physical examination proved the seeds to be those of the *Datura stramonium* or Jamestown weed, sometimes called "jimson weed." The "thorn apples" were obtained in a neighboring yard, where the plant was cultivated for its white flowers. The "jimson weed" is an annual plant, of a very vigorous growth, found in vacant lots and in the country. Since it is so common and easy of access to children, it is singular that more cases of poisoning are not reported.

The seeds were eaten about 5 o'clock in the evening. The boy ate his supper at 6 o'clock, retiring at 8 o'clock feeling as well as usual. About 12:15 he called to his mother, complaining of being alternately cold and feverish. Half an hour later he was delirious, tossed about in his bed, wanted to go barefoot, and pulled at his nightgown. After about one hour of restlessness the boy went to sleep breathing very heavily. The family endeavored to obtain the services of a physician without avail. At 6 o'clock in the morning the mother found the boy resting easy. Fifteen minutes later she went in to awaken another child and found the boy dead, with his face sunk into the pillow, fourteen hours after eating the seeds. The boy did not have convulsions, vomiting or diarrhea.

At the necropsy made twenty-four hours after death, by Dr. H. W. Burmeister, there was no evidence of rash, and no skin petechiae were present. It was particularly noted that the pupils were not dilated to any marked degree. The lungs were slightly distended, and there were a few scattered subpleural petechiae over both lung surfaces. There was a hypostatic congestion in their posterior portions. Scattered over the epicardium of all portions of the heart were numerous (several hundred) small petechiae. These were for the most part discrete, and none measured over 0.1 cm. in



Thorn apple of *Datura stramonium*.

their greatest dimension. The liver was negative except for an acute slight passive hyperemia and a parenchymatous degeneration. The jejunum and the ileum contained a thick semifluid yellowish material in considerable amount, and scattered throughout the course of the entire small intestine were about 100 seeds identified as above as coming from the *Datura stramonium*. Otherwise the organs were grossly negative.

The number of necropsies after death from atropic poisoning is small, and the lesions observed, as in this case, are not characteristic.

The literature does not give sufficient data to serve as a basis for even an approximate estimate of the lethal dose of stramonium. An Indian laborer[1] died in seven and one-half hours; the stomach contents contained eighty-nine seeds. A child of 2½ years died after having swallowed about 16 grains of seeds.[2] A girl,[3] aged 8 years, swallowed 237 seeds, and recovered with treatment. In the case reported above, the boy died from eating not more than 180 seeds. According to statistics of Falck, quoted by Kobert,[4] death occurred in 11.6 per cent. of the cases collected of atropin and hyoscyamin poisoning.

1. Allan: Lancet, London, May, 1847.
2. Duffin: London Med. Gaz., 1834, xv, 194.
3. Friedman: Jahrb. f. Kinderh., 1891, xxviii, 354.
4. Kobert: Lehrbuch der Intexikationen, 1906, p. 1043.

Special Article

THE AUTOLYSIN TREATMENT FOR CANCER

RICHARD WEIL, M.D.
NEW YORK

I have received so many requests for information concerning the new treatment for cancer described as "autolysin" that I have deemed it advisable to make a public statement on the subject. The fact that I had the opportunity of personally witnessing the application of this compound in a long series of cases has placed me in a position to express an independent opinion as to its merits. At the time when Dr. Beebe was still connected with the General Memorial Hospital,[1] New York City, a preparation was brought to the hospital authorities by Dr. A. Horowitz, with a request that its therapeutic effectiveness in cancer be made the subject of study. This mixture, which has since been described as autolysin, had been used in a number of cancer cases, and was stated to have proved of value. It had already achieved a local reputation and some degree of newspaper notoriety in the treatment of cancer.

Fig. 1.—Photograph of patient taken in the General Memorial Hospital, July 24.

In accordance with a well-defined policy of the Memorial Hospital which approves of the further investigation of therapeutic measures of whatever description, provided they offer the hope of assistance in cancer, Dr. Horowitz' mixture was accepted for study. Dr. Beebe volunteered to carry on this study. The rules of the medical board of the hospital prescribe that in such cases the exact composition and formula of the preparation under investigation be disclosed to at least one member of the board, and Dr. Beebe informed the board that this regulation had been duly complied with, and that he was in possession of complete knowledge on that subject. Consequently, Dr. Beebe was given the privilege of applying the treatment in a considerable number of cases, and the fact that I had general supervision of the clinical activities of the institution imposed on me the duty of watching the progress of these cases.

The cases entrusted to Dr. Beebe comprised a wide and diverse group, including cancer and sarcoma of the various tissues and organs of the body. Dr. Beebe has stated, in his first paper, that the cases treated in the Memorial Hospital "represent the most hopelessly incurable and inoperable group of patients." That they were inoperable is indeed true. An ethical regard for the welfare of patients forbids the use of new and experimental remedies in cases which offer a hope of cure by the older and well-tried methods of medicine and surgery. Therefore, only such cases were submitted to his treatment as could not be helped materially by the other means at our disposal, such as surgery, radium or the Roentgen ray. In not a few instances, though not all, the patients were given the benefit of radium or Roentgen-ray treatment, while autolysin in addition was administered. That all of the patients were moribund, or even in very serious physical condition, is, however, not the case. There is a large group of cancer patients, as every physician knows, who are apparently in excellent, or even in perfect health, but in whom the condition of the disease entirely precludes the possibility of effective treatment. Some of the cases put in Dr. Beebe's hands at the Memorial Hospital were in good physical condition, and here the treatment, if of real value, should certainly have demonstrated its virtue.

Since Jan. 1, 1915, twenty-three cases have been treated in the wards of the hospital by Dr. Beebe with autolysin. Of these twenty-three cases, fourteen patients died in the hospital, and eight were discharged unimproved. Only one, to the best of our knowledge, is at the present time in a condition which could be described as an improvement on that presented at the time of admission to the hospital. To this case, which seems to be identical with Case 3 of Beebe's paper[2] of October 2, I shall come in a moment for more detailed discussion. Although the eventual outcome of the cases was not affected by Beebe's treatment, the clinical course was somewhat altered thereby. In those cases in which the mixture was injected directly into the tumors, there resulted necrosis, suppuration, and sloughing of portions of the tumor masses. This effect is quite characteristic of the action of a large number of irritant or destructive substances, whether of mineral or vegetable origin, on tumor tissue. It affects the size of the mass, and may impress the mind of the patient and his friends, but does not in the least degree impede the steady and relentless progress of the malignant growth. Indeed, there is a spontaneous tendency for malignant growths to break down and die at the center, while simultaneously the living cells at the periphery successfully

1. To avoid further misunderstanding, it should be stated that Dr. Beebe's connection with the Cornell University Medical School and with the General Memorial Hospital terminated some time ago.

2. Beebe, S. P.: New York Med. Jour., Oct. 2, 1915.

pursue their mission of invasion and destruction of the healthy tissues of the body. Such a result presents not the slightest advance on methods which have been in use for centuries in the treatment of cancer. To attribute it to certain peculiar and specific virtues inherent in autolysin is, to say the least, an illogical assumption. The use of the mixture in the form of a poultice has been claimed by Dr. Beebe to produce local improvement of another type, namely, cleansing of the ulcerated surface of tumors, and a marked amelioration in the character of the discharge. This is the result which I have indeed witnessed, but it is the same result as we regularly obtain in the hospital in the treatment of ulcerated carcinomas by the usual topical applications. Further than this slight incidental change, no beneficial effect was induced.

When this patient came to the clinic he had a large ulcerous, decomposing tumor on the chin and throat. Here autolysin has practically completed the cure.

Fig. 2.—Reproduction of illustration with legend, as it appeared in Hearst's Magazine in September. According to affidavit (page 1643) this photograph was taken in the office of Dr. Beebe on June 29.

As regards the effect on malignant tumors produced by subcutaneous injection given in a part of the body distant from the disease, in other words, of the constitutional effect, we have indeed seen an improvement in the appearance of ulcerated tumors treated in this manner. On the other hand, it was no greater than the improvement which we regularly obtained in such cases by the unassisted use of the ordinary surgical dressings which were applied in these cases, exactly as in the others. Such being the fact, it seems reasonable to conclude that the improvement was due to the dressings and not to the distant injections. In no case did the constitutional treatment, as it is called, appear to exert any influence of itself.

Fig. 3.—Photograph of patient taken in October at the General Memorial Hospital.

Certain general effects are ascribed by Beebe to autolysin, such as relief of pain, diminution of anemia, improvement of appetite, nutrition and sleep. These are claims which have been made for every cure for cancer since the beginning of time. Is it, indeed, very remarkable that a patient who has been consigned to death as the victim of a hopeless malady should regain his spirits and his appetite when he is again confronted with the hope of a cure, and of the eradication of his disease? It is a phenomenon well known to every student of the disease that a large proportion of cases respond in just this manner to any treatment which is offered them. Osler has described a case of cancer of the stomach in which the mere visit to a consultant of sanguine temperament, though poor judgment, who assured the patient there was no possibility of cancer, resulted in a disappearance of all the symptoms and a gain of 18 pounds in weight. It is this psychologic fact which has occasionally deluded the honest student of a cancer cure, and which has also so generously played into the hands of the dishonest.

Contrasted with this occasional effect, however, is another set of results of which no mention is found in Beebe's first article, and a very inadequate description in the second. A fairly large proportion of our patients, certainly over half, were most unfavorably affected by the local injections. The pain of injection was not infrequently so severe that the patients refused to accept, or the intern to administer, the treatment. The consequent swelling was at times so marked as to give great distress, and in two instances the treatment appeared to be responsible for an almost fatal hemorrhage. The general effect on the health and nutrition in many cases appeared to be so deleterious as to dictate the cessation of the treatment. Unquestionably the latter effects far outweighed the former very questionable benefits in frequency and in significance. Moreover, they occurred not only in the earlier and experimental stages of the use of autolysin, but even toward the end of the time during which it was employed in the hospital; in other words, a year of study failed materially to obviate these disastrous effects of the treatment.

I come now to a consideration of certain of those cases, reported by Dr. Beebe[2] in his paper of October 2, "selected to include those in which markedly favorable effects have been obtained." Of all of the cases there reported, only two are recognizable as Memorial cases. To the description of at least one of the cases as detailed in

this paper, and probably of the other, I am able to add certain important facts from the records of the Memorial Hospital.

Case 8 describes a very remarkable and peculiar condition, which corresponds in every essential detail, including the age, with one treated by Dr. Beebe at the hospital. The records show that at Dr. Beebe's request this patient received three Roentgen-ray treatments for his disease, at the same time that the doctor was administering the autolysin. This fact is completely ignored in the published statement, and the remarkable improvement of the patient is ascribed entirely to autolysin.

Case 3 corresponds in almost every detail of the description with one observed and treated by Dr. Beebe in the wards of the hospital. The age of our patient, however, was given as 49, that of Case 3 as 52. The autolysin was given by poultice and injection, exactly as in the published case. The improvement detailed in Case 3 corresponds with that observed in the corresponding hospital case. In the hospital case, however, four Roentgen-ray treatments were administered, a fact which is not mentioned in the published report. In view of the discrepancy of three years in age, it is possible that the cases are not the same, although the exceptional nature of the clinical condition, with the close correspondence in so many details, would seem to render such coincidence most unlikely. The hospital case here described is the one previously referred to as the only patient now alive who shows improvement.

When one realizes the brilliant, even if often temporary results accomplished by the use of the Roentgen ray, it is quite evident that some, if not all, of the results ascribed to the autolysin are actually attributable to the rays. We have not rarely seen similar disappearance of such tumors from the use of the Roentgen ray alone.

There is a further addition of importance which I am in a position to make. Case 7, in Dr. Beebe's first paper,[3] described the favorable results of treatment by autolysin in a case of cancer of the mouth. This was the only patient of those described from the Memorial Hospital in that paper, who was then alive and, according to Beebe, benefited by the treatment. In the second paper Dr. Beebe states that the last information received of this case was "about five months ago, when the condition was approximately as that stated in the first paper," which specified freedom from pain, a good general condition, and so marked a local improvement that a casual examination would fail to discover any remains of the tumor. This patient did indeed improve for a few weeks in Dr. Beebe's hands. When he left the hospital, however, his conditon was poor, and there was unmistakable evidence of cancer in the floor of his mouth. The hospital records show that this man was discharged "unimproved" on April 5, fully six weeks before the appearance of Dr. Beebe's first paper. Several months ago he wrote to us that his condition was worse than it had ever been, and his pain increasing. Within the last few days I have been informed that his condition is critical.

Within the last few weeks, accident has brought to the hospital another case in which the published records require serious correction. Dr. Henry Smith Williams, who is associated with Drs. Beebe and Beveridge in the enthusiastic advocacy of the autolysin treatment, has recently written a popular review of the treatment for *Hearst's Magazine* of September. This article had wide circulation through the country, and to my personal knowledge has added several recruits to the army of autolysin patients. In that article appears the accompanying illustration (Fig. 2) of an autolysin case, with the statement that "here autolysin has practically completed the cure."

During the very month of that issue, namely, September, the same patient was under treatment at the Memorial Hospital, having sought help in July for a rapid extension of his disease. His photograph (Fig. 3) at the present time forms an interesting pendant to that in *Hearst's*. This patient affirms under oath[4] that the photograph in *Hearst's* was taken on the very day following his first and only treatment with autolysin on June 28. He states that he never again consulted Dr. Beebe or his associates or communicated with them in any way.

These few facts complete the data which I can at present add to the discussion of the efficacy of the autolysin method. In view of the fact, however, that patients are coming to seek it even from distant states and that, to my personal knowledge, many unfortunates, suffering not alone from the disease but from poverty, have had to make the most serious financial sacrifices in order to secure the fancied benefits and meet the expense of the treatment, it may not be amiss to add such further considerations as might be of assistance in estimating its value.

Autolysin has certain of the characteristics which are presented by many of the cancer nostrums of past centuries. Such is the fact that it is composed of a congeries of herbs, the pharmacologic action of which is practically unknown. A more serious accusation, however, can be brought against it. Beebe and his associates are in the position of claiming to have made certain cancer patients "clinically well" with a remedy, the composition of which they have not divulged. The list of herbs which they recite gives no adequate description of the mixture. They disclose neither the parts of the plants which they use, nor the mode of preparation. I violate no confidence when I state that Dr. Beebe gave his word to the medical board of the Memorial Hospital that nothing would be published concerning the effects of autolysin, without previously disclosing publicly its formula and preparation. It might be thought that even though the formula had been withheld, the profession could obtain the mix-

3. Beebe, S. P.: New York Med. Jour., May 15, 1915.

4. The following is a copy of the affidavit:

I, Louis Felsenfeld, hereby solemnly swear that on p. 203 of Hearst's Magazine for September, appears a picture, with the description "When this patient came to the clinic he had a large ulcerous decomposing tumor on the chin and throat. Here Autolysin has practically completed the cure," and that this picture is the reproduction of a photograph of me. I further solemnly swear that I have made in all three visits to the office of Drs. Beebe, Beveridge, and Quimby. At the first visit, I made the financial arrangements. I was told that the cost of treatment would be $200.00. I stated that I had only $25.00. They told me to return with the money. About a week later, on June 28, I returned, and paid $25.00, and they told me that I would have to pay them $25.00 in addition for the full cost of treatment. On June 28, I received an injection into the arm, which I was informed was Autolysin. This was the only treatment which I ever received from these physicians. They told me to return on the following day to receive a special treatment. I returned the following day, and received no treatment, but had my photograph taken. After this I never saw or consulted, or communicated in any way with any of these physicians. I solemnly swear that the treatment administered in no way improved my condition, which rapidly became worse.

LOUIS FELSENFELD.

Sworn to before me this 13th day of October 1915.

Ralph P. Blake,
Notary Public No. 201,
(Seal) New York City.

ture for use in the treatment of cancer cases. An interesting document in this connection is furnished by a letter to a physician in Seattle, dated July 29, signed by S. P. Beebe,[5] and recently published by *Northwest Medicine*. In that letter Dr. Beebe declares to his correspondent that the ordinary physician is not competent to use the drug, and lays down the financial terms on which his firm is ready to examine the case — the sum of $250 for "examination, consultation, etc." Of course, writes Beebe, if the doctor will come to New York from Seattle they will be glad to show him how to administer autolysin. After this, the doctor will be able to administer it himself.

I wish to add a word in conclusion. The majority of those who will read this article have had practically no means of judging of this treatment through their own observation. Cancer patients are peculiarly gullible, and will snatch at any straw in the hopeless struggle against their disease. Such unfortunates gladly undertake long and painful journeys at the cost of great suffering, and surrender their last remaining dollar, in the hope of gaining relief. Surely they deserve to know all that we can tell them of the treatment which is so enticingly portrayed. My own personal belief, founded on long observation, is that autolysin is useless; that it adds nothing of value to the methods now generally accepted; and that it often aggravates the sufferings and accelerates the death of the patient.

970 Park Avenue.

Therapeutics

PNEUMONIA

(*Concluded from page 1553*)

SERUM AND VACCINE TREATMENT

The value, in all cases, of serum or vaccine treatment of pneumonia is still in doubt. Rosenow[6] found the opsonic content of the serum of the blood in lobar pneumonia to be below normal during the early part of the disease and to become, in favorable cases, above normal as the symptoms began to subside. When there is a severe infection and the patient is overwhelmed by the disease the antibodies in the serum were found to remain below normal. Rosenow developed an autolyzed pneumococcic vaccine which, when injected into a patient with pneumonia, he found, would hasten the production of the antibodies needed to fight the infection, and therefore would hasten recovery. Later Rosenow and Hektoen[7] reported that the mortality from pneumonia in their cases had been reduced by injecting this antigen or vaccine.

Vaccination as a prophylactic and to immunize against pneumonia is purely in the experimental stage.

MEDICINAL TREATMENT

We are past the stage when any dogmatic advice can be given in regard to the use of drugs in pneumonia. The physician who has charge of a pneumonia patient must decide whether a drug is needed to combat a condition or symptom and which drug is the best for the object aimed at. The following are suggestions of drugs that have positive value for certain conditions and brief descriptions of the pharmacolige action expected of them:

Morphin or Codein.—If the pain is acute in the beginning of pneumonia, one of these sedatives should be given. Acute pain is depressant and should not be allowed. Strapping of the chest is inadvisable in pneumonia. An ice bag over the painful region of the chest does not abort pneumonia and is generally not desirable, and on account of the generally high fever at this time, hot-water bags are not advisable.

A cough that is frequent and unproductive, as it may be in the first stage of pneumonia, will be quieted and the pain alleviated by codein sulphate in doses of 0.01 gm. every two, three or four hours as is necessary. If later there is great insomnia, with a very weak circulation, the safest hypnotic is morphin in a dose not sufficient to slow the respiration greatly or to prevent the needed and necessary expectoration. If there is meningeal irritation or an actual meningitis, morphin is generally contraindicated, as it will cause more delirium, unless the dose is undesirably large.

Acetanilid and Antipyrin.—Acetanilid, 0.10 gm. every three hours for four or five doses, or antipyrin, 0.50 gm. every four hours for two or three doses, may be of advantage in lowering the high temperature in the first stage of this disease. These drugs also will lower the blood-pressure and quiet the heart. Such an action may be needed in the very acute first stage of pneumonia, provided that the heart is normal. At this stage, the lowering of the blood-pressure produced by these drugs is often beneficial. Later in the disease, even if there is high temperature, such coal-tar products are not indicated and should not be given.

Ammonium Chlorid.—If the expectoration is very adhesive and cohesive, scanty in amount and hard to raise, ammonium chlorid acts satisfactorily and is indicated. The dose should be 0.25 gm. every two hours, given in a sour mixture, or in lemonade; and if there is much pain or if there is ineffective, frequent cough it may be combined with codein sulphate. Ammonium carbonate, with its irritant, nauseating action, has no tangible cardiac stimulant action; therefore it should not be used.

Sodium Iodid.—This drug in small doses, as 0.20 gm. three times a day, will promote an increased mucous secretion, render the cough easier, and may hasten a delayed resolution of the lungs. Also, the stimulant effect of the iodin may increase the inhibitory activity of the thyroid gland, and it is now known that the thyroid gland is always injured and soon becomes more or less insufficient in acute infections. A normal thyroid secretion is stimulating and more or less antitoxic.

Digitalis.—Digitalis is another drug that has sometimes been lauded, even in the first stages of pneumonia. If the blood-pressure is low and the heart is primarily weak, and there is a very bloody, prune-juice expectoration showing a poor activity of the right ventricle, digitalis may be of value and sometimes does a great deal of good. On the other hand, with the more sthenic type of pneumonia it seems to increase the lung congestion and may do harm. In the heart failure of pneumonia it does not seem to raise the blood-pressure. After the disease has been in progress a week or more there is more or less of a

5. Beebe, S. P.: Northwest Med., September, 1915.
6. Rosenow, E. C.: The Journal A. M. A., Sept. 7, 1912, p. 795.
7. Rosenow, E. C., and Hektoen, L.: The Journal A. M. A., Dec. 20, 1913, p. 2203.

myocarditis, perhaps a very little, perhaps considerable; at all events, digitalis to increase muscular activity of the heart at this stage is generally inadvisable.

Strophanthin. — This drug procured in sterile ampules and injected directly into one of the veins in the elbow, provided digitalis has not been recently administered, is often efficient in tiding a patient over a shocked condition. It should rarely be repeated.

Strychnin.—This is a drug that has been very much overused. To begin strychnin immediately in acute disease is a serious mistake. To give it in large doses very frequently is an error. It excites the nervous system, renders the patient irritable, may cause muscle twitching, and may so irritate the heart as to prevent normal diastolic rest and normal diastolic relaxation. In acute disease, it has been shown not to raise the blood-pressure in serious conditions. In spite of these facts, clinically strychnin often does very good work and even seems to tide our patients over critical periods. In a sluggish, inefficiently contracting heart, when digitalis is contraindicated, strychnin is many times of benefit in making the heart more normal. If a patient is stupid, apathetic and indifferent to his condition, strychnin lights up the nervous system desirably. The rule for strychnin should be, when indicated as shown by this discussion, to give to an adult not more than $\frac{1}{30}$ of a grain, hypodermically, if deemed advisable, once in six hours, and such a dosage should not be long continued. As soon as there is improvement, it should be given by the mouth instead of hypodermically.

Camphor.—Laboratory findings and some hospital reports have not shown that camphor is of value in heart failure. On the other hand, clinical experience at the bedside not infrequently shows that hypodermic or intramuscular injections of a sterile preparation of camphor and oil improves the pulse as to its regularity and volume, causes the surface of the body to be warmer, and many times relieves a cardiac dyspnea by thus equalizing the circulation. At the same time it is a mild nervous and cerebral stimulant, which is often desirable, and it never irritates or causes any heart pangs as some of the so-called cardiac drugs can occasionally do. When there is cardiac dyspnea, when the pulse is small and especially when it is slow and weak and the surface of the body is cold, and when there is cold perspiration, that is, a partial collapse condition, camphor given hypodermically every three or four hours until there is improvement will many times be found of benefit.

Pituitary Fluid.—This represents one of the activities of the posterior lobe of the pituitary body. It has more or less superseded epinephrin in acute conditions, as pituitary raises the blood-pressure a little longer, is a little less sudden in its action, seems to stimulate the heart considerably, and stimulates and increases the activity of the kidneys. The contents of an aseptic ampule should be given hypodermically and perhaps repeated two or three times at three or four hour intervals.

Caffein.—The administration of this drug as coffee or tea has already been discussed under diet. Perhaps no drug, except epinephrin, the action of which is very fleeting, so frequently raises the blood-pressure in serious conditions as does caffein. In emergencies it may be administered hypodermically, or it may be given by the mouth several times in twenty-four hours. It should not be forgotten that it is a cerebral stimulant and not a sleep producer. Its action on the heart is almost always for good, except in some few patients who show an idiosyncrasy to it, the heart becoming irritable from any form of caffein.

Ergot.—This drug, when given in aseptic preparation intramuscularly, certainly raises the blood-pressure, quiets the central nervous system and gives a better vasomotor tone, and may relieve hypostatic congestion of the uninvolved lung, which is one of the dangers of a failing heart in pneumonia. If the blood-pressure is high, this drug should not be given.

Nitroglycerin.—When pneumonia occurs in a full-blooded, sturdy man, especially if he is of the age when his blood-pressure is a little high, small doses, as $\frac{1}{200}$ to $\frac{1}{100}$ grain, every four to six hours, tends to dilate the peripheral vessels and relieve the internal congestion. It also slows and quiets the circulation. By bringing more blood to the surface of the body, it also tends to promote loss of heat and a reduction of temperature. It will never weaken a heart as long as the blood-pressure is high; it should not be used if the blood-pressure is low.

Alcohol.—This drug has lately come into great disfavor. It was, of course, inexcusable to give it in large amounts in pneumonia. On the other hand, as a drug, it still has certain physiologic activities which may in certain cases be of value. In the first place, alcohol will inhibit more or less the acidemia which might otherwise result from a patient's inability to take enough nourishment or enough starch. It then becomes a food, given in such doses as not to cause flushing, throbbing of the head, or cerebral irritation. Also, every clinician has seen a rapid heart become slower, more regular, and the pulse become of more equalized volume under the proper use of alcohol in certain selected cases of pneumonia. In such patients small doses of alcohol may be of value. It will be seen from the discussion of nitroglycerin, however, that many times this drug will act as well, as far as the circulation is concerned, but of course nitroglycerin is not a food. The alcohol selected should generally be a good whisky or a gin. This is not to urge the administration of any form of alcohol, but is to show that alcohol is a drug with physiologic activities and may be used in certain conditions with as much discrimination as is used in giving any other drug.

Hypnotics.—It is hardly necessary to name the different hypnotics. As above stated, in very weak conditions the only safe hypnotic is morphin. In delirium and in insomnia it may be well to use some other hypnotic than morphin. Almost any one of them causes some subsequent cardiac depression. The best hypnotic is, perhaps chloral, but there is a great prejudice against its use as it is supposed to be a very great cardiac depressant. There is some doubt about this. Probably an effective dose of chloral is no more depressant to the heart than is an effective dose of any other hypnotic. A few doses of sodium bromid may be advisable. If a synthetic drug is to be selected, sodium diethyl-barbiturate (veronal-sodium, medinal) is perhaps less depressant, in effective dose, than any other.

As stated at the outset, a restful, quiet room, a sensible, efficient nurse, a sufficient amount of fresh air, and a suitable diet and proper care of the bowels will prevent high temperature, heart failure, low blood-pressure, insomnia, tympanites and toxemia in very many cases, and prevention is far better than the treatment of these serious conditions.

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SATURDAY, NOVEMBER 6, 1915

STATISTICS OF INFANTS AT BIRTH

The variations in the weight of the human infant at birth have been the subject of considerable speculation and statistical study. It has been asserted that the weight at birth is greater the nearer the mother's age is to thirty-five years, the greater the weight of the mother, the greater the number of previous pregnancies, and the earlier the appearance of the first menstruation. Race and climate have also been assumed to be of influence.[1] Minot[2] believed that all of these influences work principally through prolonging or abbreviating the period of gestation, and that the variations at birth depend partly on the duration of gestation and partly on individual differences of the rate of growth in the uterus.

A recent careful statistical analysis of more than 500 confinements, yielding approximately equal numbers of male and female infants, showed that the length of the period of gestation is very much less variable in normal females than the weight of the infant which is delivered.[3] According to Robertson's calculations, the mean length of periods of gestation yielding males is 282.5 days, with a probable error of $\pm$ 0.55 days and a variability of 4.47 per cent. The mean length of periods of gestation yielding females is 284.5 days with a probable error of $\pm$ 0.57 days and a variability of 4.85 per cent. The deviation of normal periods of gestation from the mean are fortuitous in origin. The chances are a million to one against a male child being delivered at the termination of an otherwise normal pregnancy before 224 days or of a female child before 222 days after the onset of the last menstruation. Hence all seven-month children (210 days) may be regarded as the fruit of pathologic pregnancies. It is inferred that the length of the period of gestation in normal females is primarily determined, not by the fetal development, but by a maternal cycle of events which is to a considerable extent independent of the stage of development attained by the fetus.

1. Cf. Lee, F. S.: Reproduction, American Textbook of Physiology, 1896, p. 925.
2. Minot, C. S.: Human Embryology, 1892.
3. Robertson, T. B.: On the Fortuitous Origin of Departures from the Normal Period of Gestation in Man, Am. Jour. Obst., 1915, lxxi, No. 6.

Data now available for a number of different countries of the world bring out the striking similarities in the average weights at birth of infants from the same groups of people, and an unexpected difference between the averages for diverse peoples. For infants born in Great Britain the average weight measurements at birth have long been quoted as 113.6 ounces for males and 110.4 ounces for females. Newer figures by Karl Pearson[4] give the mean weight at birth of 1,000 male infants born in London (at the Lambeth Lying-in Hospital) as 116.8 ounces, while that of 1,000 female infants is 113.2 ounces. For Birmingham corresponding figures of 114.9 and 113.5 ounces respectively have been reported.[5]

T. B. Robertson calls attention to the excellent agreement with one another of the various estimates of the weight at birth of British infants born in the British Isles. Records which he has just published[5] in relation to the Queen's Home, a maternity hospital in Adelaide, South Australia, in which the admitted patients belong to the same laboring and unskilled artisan classes as do those furnishing the data for the British Isles, give unexpectedly different figures. Robertson found that the average weight at birth of 247 male infants born in South Australia, the fruit of normal confinements, is 127.3 ounces, while that of 264 female infants is 121.2 ounces. He thus emphasizes the striking fact that South Australian infants weigh from 8 to 10 ounces more at birth than infants born in Great Britain. They are also from 5 to 6 ounces heavier at birth than infants of English descent born in the Eastern United States.

Robertson points out that the results observed cannot be due to any racial selection among the immigrants from the British Isles who have given rise to the population of Australia: In the first place, there is no evidence that such selection has occurred to any greater extent than it has, for example, in London, of which city the very great increase in population during the past century has been contributed by all parts of the British Isles, and, in the second place, there is no evidence of the existence of a race in the British Isles which is in any noteworthy degree superior in physical dimensions to the average inhabitant of England. It has been said that the evolution of the Australian people may be regarded as that of the British people under changed climatic, social, and economic conditions. To these factors, therefore, Robertson is impelled to ascribe the superior weight of the Australian infant at birth. He specifically points out that the climate is much less rigorous than that of England, food is cheaper in proportion to income, or, when of a like price, better in quality, and the social and

4. Pearson, K.: Data for the Problem of Evolution in Man, Proc. Royal Soc. London, 1900, lxvi, 23.
5. See Robertson, T. B.: A Comparison of the Weights at Birth of British Infants Born in the British Isles, the United States, and Australia, Univ. California Pub. Physiol., 1915, iv, 207.

economic conditions are so far an improvement on those prevailing in England that whereas women of the laboring and unskilled artisan classes in England have frequently to supplement the family income by their own exertions, those of the corresponding classes in Australia as a rule confine their physical activities to the management of their households and families, a condition of affairs which, quite apart from the possible direct effects of physical labor on the mother, must have important indirect effects in ameliorating the nutritional and hygienic conditions within the household. Attention is called to the fact that these conditions may be conceived to have an appreciable prenatal effect on the growth of the child, since Pinard has shown that the rest and improved nutrition of hospital life cause a notable increase in the average weight of infants delivered by working mothers who spend a part or a whole of the period of pregnancy in a lying-in hospital, and Prochownik has shown that the size of a child at birth may be reduced by restricting the diet of the mother.

As regards weight at birth, the Anglo-American infant is intermediate between the Australian infant and the infant born in the British Isles. In a way this corresponds with the character of the social and economic conditions prevailing in the three countries concerned. The interesting suggestion is made that the mean weight of infants of the same race at birth is a very sensitive criterion of the social and economic environment in which they are born. If this proves to be true, a new relation between the economic and hygienic problems of a nation will be brought into prominence.

THE "AUTOLYSIN" TREATMENT FOR CANCER

Modern science calls for proof — proof as indubitable and unqualified as the case will permit. Scientific men accept new theories and new alleged facts only when they are supported by reliable evidence. Especially is this true in the realm of scientific medicine. Unlike the exact sciences, there are in medicine so many elements which may vitiate definite conclusions that the careful physician is slow to accept claims made for new therapeutic agents. And rightly so; for human health and life are too valuable to be made the sport of untried theories and unsupported claims. In a world largely dominated by commercial instincts, this unwillingness on the part of the physician to accept, at its face value, every claim made for a new therapeutic product has long been a source of irritation to the exploiter. It is not surprising, then, that the refinements of twentieth century advertising have been brought to bear in overcoming the physician's caution — a caution exercised wholly in the interests of his patients; hence the spectacle, during recent years, of the exploitation of additions to materia medica — some of which may have had an appearance of at least quasiscientific value — brought to the notice of the public, rather than to the medical profession, by every art known to the modern advertiser. At the same time a semblance of scientific standing has been given the products by publishing in such medical journals as would accept them articles describing these products. The theory, apparently, on which such methods are based is that by creating a sufficient demand on the part of the public for these products, the physician will be dragooned into using preparations which his sober judgment tells him have not passed through the refining fires of scientific investigation. It is only necessary to call to mind the Friedmann "consumption cure" campaign, and the resurrection of the discredited scopolamin-morphin anesthesia under the popular name of "Twilight Sleep," to realize the potentialities for harm that this method of exploitation carries.

The most recent example of this pernicious method of bringing into the public eye new therapeutic agents is exemplified in what has been called the "autolysin" treatment for cancer. Early in the publicity movement for this treatment THE JOURNAL[1] urged caution, calling attention to the secrecy and the unscientific character of the formula. "Autolysin" was brought into the limelight of publicity chiefly through the medium of sensational newspaper and magazine articles. This was accomplished before the preparation had been so tried out as to establish, without question, its value or lack of value. Its exploitation makes the thoughtful wonder whether it belongs in the realm of scientific discovery or in that of crude commercialism. As is always to be found in such cases, the failures are minimized and the successes are heralded. Its use for all practical purposes has been wholly in the hands of its friends and promoters. Naturally, reports emanating from such sources must be looked on as *ex parte* statements, rather than as scientific records. The time has evidently come, as it will come in all such cases, when we may expect to hear the other side. A little while ago[2] THE JOURNAL published a disclaimer from a Detroit physician whose name had been connected with one of the magazine articles boosting the treatment. Elsewhere in this issue is further evidence on the other side.[3] Also, THE JOURNAL submits some correspondence[4] relative to the exploitation of this new product, dealing with the commercial aspect of the case.

Some of the best brains in the world are working on the problem of the prevention and cure of cancer; so far the solution is not in sight. When it comes it will come as a gift of medical science to humanity. It

1. The Horowitz-Beebe Treatment for Cancer, editorial, THE JOURNAL A. M. A., July 24, 1915, p. 236.
2. Sept. 18, 1915.
3. Weil, Richard: The Autolysin Treatment for Cancer, THE JOURNAL A. M. A., this issue, p. 1641.
4. Propaganda Department, p. 1662.

will not come in the form of secret and mysterious combinations controlled by a few individuals to be doled out to those who are able, or willing, to pay the toll demanded. It will be determined after a series of experiments carefully conducted under scientific control in various institutions and under the observation of disinterested, scientific workers. Only under such conditions will it be possible to declare, with any degree of scientific accuracy, that a successful treatment has been established.

Whether the "autolysin" mixture may possess some elements of value in combating the scourge of cancer must be left to the future to decide. Even should it be found of use this would not alter the fact that the methods of exploitation have been unworthy of scientific men, and in their effects on the public, the very refinement of cruelty.

CRAIGIASIS

The classification of amebas was not an especially difficult task until after the pathogenic forms became known and artificial culture mediums were developed, when the difficulty of distinguishing between the pathogenic and the innocuous forms arose. At present, it is recognized that the nature of the pseudopodia and the ectoplasmic and endoplasmic differentiation are unsafe diagnostic characters by which to identify amebas; for these have been shown to vary widely in the same species under different conditions of environment. Gradually improvements in cultural methods, recognized nuclear differences and other dissimilarities in ameboid types of rhizopods have made generic separations among them imperative. Accordingly, the old genus *Ameba* has been distributed by a protozoologist into a series of allied genera: Ameba, Vahlkampfia, Nägleria, Craigia, Trismastigameba and Parameba.[1]

This growing complexity has been accompanied by changing views regarding the pathogenesis of some of the species. At one time some authors regarded all amebas as being without significance in relation to disease, because of the frequently reported presence of these forms in the stools of apparently healthy individuals. Thus, in 1905 Craig examined 200 persons not suffering with dysentery, and found amebas in sixty-five. Doubtless, periods occur in the course of amebic dysentery in which symptoms are entirely lacking. The recognized existence of unharmed or immune carriers of other types of organisms makes it seem less strange today than it might have seemed a few years ago to learn that there are some individuals apparently perfectly healthy who harbor amebas in large numbers for long periods without any unfavorable symptoms. Of course, lesions may exist without becoming evident during life. Strong[2] has expressed the questions at issue as follows: Are the instances cited cases of natural resistance or immunity against the parasite; or are they instances in which the parasites are unable to exert any harmful action until the proper symbiotic bacteria appear in the intestine, and are only awaiting this moment to become pathogenic; or are they cases in which the organisms are still incapable of producing any injury until through some mechanical disturbance a small erosion in the mucosa occurs; or are they instances of infection with an ameba harmless to man?

Between the extremes of opinion, that all amebas are harmful, and that none really have etiologic significance per se, it seems safe to say at present that the *Endameba histolytica* and its near relatives are pathogenic, whereas the *Endameba coli* may be a harmless inhabitant of the human intestine, where it lives on the available bacteria. In 1906, Captain Craig of the United States Army observed a small ameba in the human intestine in six cases of chronic diarrhea. He named it *Parameba hominis*, but it was later given the new generic designation *Craigia* in honor of its discoverer. Although its habitat in the human intestine was undisputed, the question as to its possible relation to chronic diarrhea has called for confirmation. Evidence of this sort has recently been furnished by Dr. Barlow,[3] of the Medical Department of the Cuyamel Fruit Company of Honduras.

In the course of Barlow's investigations concerning the prevalence of intestinal parasites on the coast of Honduras, a flagellated organism, differing from *Endameba histolytica*, was observed in numerous cases. All of these had presented symptoms of mild dysentery or chronic diarrhea. The additional fact that no cases of flagellates were found without the symptoms, along with other features which need not be detailed, have led to the identification of the parasite as *Craigia hominis* (Craig's *Parameba hominis*), and the indictment of it as the etiologic factor in the intestinal disease.

Craigiasis has accordingly been defined as a diseased condition of the body produced by infection with protozoa belonging to the genus *Craigia*. It is probable that the latter has a wide distribution. Craig's cases were all in residents of the Philippine Islands, or recent arrivals from there. Barlow's cases were found in Honduras. They have been grouped from among those furnished with drinking water from certain supplies. The grouping has been so marked that Barlow is strongly inclined to attribute the chief source of infection to polluted water, though the possibility of introduction of the parasites by direct or indirect contact is not excluded. It is reported that patients with craigiasis may remain as carriers for a long time.

In its morbid anatomy, this disease doubtless involves comparatively superficial ulcerations of any

1. Calkins, G. W.: Genera and Species of Amoeba, Tr. XV Internat. Cong. Hyg. and Demography, Washington, 1912, ii, 287.
2. Strong, R. P.: Amoebic Dysentery: Osler's Modern Medicine, 1907, i, 499.
3. Barlow, N: Craigiasis, Am. Jour. Trop. Dis. and Prev. Med., 1915, ii, 680.

or all parts of the intestine, with a tendency to the formation of abscesses in the liver, and possibly in other organs. Secondary changes in other parts of the body, due either to intoxication from the derangement of function of the damaged organs, or to the entrance of bacteria in the lesions produced by the parasites, may occur. Among the many therapeutic measures tested, the only effective treatment was found to be either with emetin (alkaloid), hypodermically, or ipecac, internally.

THE IMPORTANCE OF AGGLUTINATION IN IMMUNITY

The well-known phenomenon of agglutination of bacteria by homologous immune serum has received little consideration as a factor in the defense of the organism against infection. Gruber and his associates, in their classical work on the nature of agglutinins, expressed the opinion that these substances were of primary importance in the protective mechanism of the body. They believed that the englobement of the bacteria by the leukocytes in vivo in the presence of immune serum was aided by the agglomeration of the bacteria and their accumulation in the different organs of the body. Subsequent investigators, although appreciating the great value of the reaction of agglutination in the diagnosis of certain infectious diseases and in the differentiation of varieties of bacteria, were unable to find experimental evidence in vitro in support of Gruber's hypothesis. Now, indeed, it is almost the general view of immunologists that the part played by the agglutinins in immunity is merely incidental and subordinate, the important factors being other antibodies such as the opsonins, bacteriolysins and antitoxins.

Some important observations pertaining to this phase of immunity have recently been made by Bull[1] which indicate a wide disparity between the results of agglutination experiments in vivo and in vitro. In an investigation of the manner of the rapid disappearance of pneumococci and other organisms from the blood stream of infected rabbits, following the injection of immune serum, it was found that the serum caused an almost instantaneous agglutination of the organisms. Smears taken from the heart's blood of the rabbit a few seconds after the injection of the serum often revealed a marked clumping of the invading bacteria. Furthermore, these clumps rapidly accumulated in the internal organs, especially the liver and spleen, where they were taken up by the assembled polymorphonuclear leukocytes and ultimately destroyed. These reactions were specific, as in the test-tube experiments, but agglutination seemed to take place in dilutions of serum which were entirely ineffective in experiments made in vitro. In all of Bull's researches, including instances of both natural and passive immunity, the agglutination of bacteria in the blood of the infected animal was followed by phagocytosis and destruction of the organisms in the viscera of the body, and a subsequent disappearance of the bacteria from the blood stream. It was observed, however, that when agglutination was not complete, a few organisms remained in the blood, later to multiply and cause a fatal bacteremia. In view of these facts, it seems probable that the agglutinins, like the opsonins, antitoxins and bacteriolysins, are important protective elements.

These observations are of great value in emphasizing the intricate nature of the protective mechanism in the animal body. The evidence at hand does not minimize the importance of other well-known phenomena occurring in the reaction to bacterial invasion, but emphasizes the coöperation of antibody actions and leukocytic activity as the forces on which depends the outcome of the struggle between many forms of infection and resistance.

1. Bull, C. G.: The Agglutination of Bacteria in Vivo, Jour. Exper. Med., 1915, xxii, 484.

ABOLISHING SECRECY AND MYSTERY IN "PATENT MEDICINES"

Nearly a year ago—Dec. 31, 1914—the New York Board of Health made a notable revision of the sanitary code. The revised code requires that on and after Dec. 31, 1915, no proprietary or "patent medicines" shall be sold in the city of New York until certain requirements have been met. The essential requirement is that the names of all ingredients for which therapeutic effects are claimed, and of all other ingredients, except such as are physiologically inactive, shall be furnished the department of health. A statement of the quantities of these ingredients is not required. This information will be given in confidence and will not be open to inspection by the public or any other than the official custodian of such records or those duly authorized to prosecute the laws, municipal, state and federal. An alternative is offered. Instead of depositing this information with the department of health, the exploiters of "patent medicines" may print on the label conspicuously, clearly and legibly the name—not quantity—of each ingredient in the product. If this is done, the preparation is removed from the class designated by the section of the code as constituting a "proprietary and patent medicine."

As was to be expected, this move on the part of the health authorities of the city of New York for the better protection of the public health met instant and active opposition on the part of "patent medicine" makers. Some of this opposition was described in the Propaganda Department of THE JOURNAL, Jan. 16, 1915. Many meetings have been held and much perfervid oratory dispensed by the "patent medicine" makers and their henchmen in the apparent attempt to bluff the health department. A good deal of the

talk is, doubtless, of the same nature and for the same purpose as that indulged in by the small boy who passes the lonely churchyard after dark. Whether it has had the result of keeping up the flagging courage of those who might perforce be tempted otherwise to obey this new law in the interest of the public health remains to be seen.

As the time for the enforcement of the ordinance comes nearer, that which originally seemed to be solid opposition begins to change. The *Weekly Bulletin* of the Department of Health of the City of New York for Oct. 23, 1915, reproduces a letter, signed by some leading wholesale druggists and dealers in proprietary medicines, in which the health department's registration ordinance is endorsed. These concerns go even farther. Not only do they signify their intention of selling only patent and proprietary articles that have registered under the new law, but they also "go on record as favoring a federal law regulating the sale of patent and proprietary articles, for the same reasons which brought about the passing of the above mentioned local ordinance." The names of the druggists and dealers who thus exhibit a wholesome respect for the public health and a due regard for the laws of their city are: Bakst Brothers, Britt, Loeffler & Weil, Bruen, Ritchey & Co., Eimer & Amend, Henry Klein & Co., Lehn & Fink, C. S. Littell & Co., Matz & Cohen, McKesson & Robbins, Schieffelin & Co., and Towns & James. These wholesale druggists and dealers have also sent a communication to the manufacturers of the patent and proprietary medicines informing them that they intend complying with the ordinance and would, therefore, request the manufacturers to make their articles legally salable, and in their letter they add, "As federal legislation of a similar nature seems to be impending, compliance with these new requirements seems to be more urgent in order to make your products salable in all parts of the country."

The New York ordinance is unquestionably a step in the right direction, a forward move in the interest of public health and safety. It would be more desirable if the ordinance required, without alternative, a definite quantitative declaration on the trade package of the active ingredients of each product. If the people desire to treat their own ailments — as they have a perfect right to do — they should know what they are getting in the preparations sold for the relief of such ailments. Nevertheless the New York law will, even in its present form, give a much larger degree of protection than has heretofore been possible. Dr. Goldwater, commissioner of health, is to be congratulated on the not inconsiderable service he has performed in bringing about the enactment of this ordinance. It is a service that is not confined to New York City alone, for every forward movement, no matter how local, is far reaching in its moral effect.

THE BOWEL MOVEMENT

"It may sound like a Hibernianism, but food does go down the [alimentary] tract more easily because it is put in at the upper end." This quotation, from a recent article[1] on the motor functions of the intestine, furnishes the text for what ought to be an important consideration in relation to the movement of the bowels. Nothing in the daily life of man is of greater import for his comfort and health than the proper evacuation of the alimentary canal. For some reason, the origin of which is not easily discovered, civilized man in the higher walks of life has attempted to establish an artificial habit with respect to this function. One copious movement of the bowel early every day — soon after rising — is regarded by thousands as conforming to a normal, healthful, physiologic routine. Precisely as the failure to perform this act once a day is popularly looked on as a menace to comfort and even good health, so its more frequent occurrence is not uncommonly the occasion for worry lest diarrhea or other forms of impaired alimentary behavior may be at hand.

What is the physiologic moment for the evacuation of the bowel? Is there any urgent theoretical reason why it should occur at any particular time, or rather, why habit should select for it the time immediately after rising? To the individual employed in business or other vocational pursuits, convenience may dictate the advantage of discharging a disagreeable duty at the most convenient moment, so as to be relieved from personal inconvenience during the remainder of the day. One may as reasonably, however, establish the habit of one meal a day or two meals at fixed hours, and disregard "the call of the stomach."

Even the most cursory observation of the higher animals shows that the emptying of the bowel does not conform to the fixed routine of infrequent defecation to which man has intentionally become resigned. The newer physiology of the alimentary tract clearly teaches that there are natural periods when peristaltic waves are initiated which would naturally induce an emptying of the lower bowel in due time. Every part of the intestine is in a state of activity which can be played on and modified by impulses reaching it from all portions, above and below. Hertz[2] has demonstrated in the case of man that, with the passage of food out of the stomach, the ileocecal valve relaxes, and material travels through the colon at the same time. These features have been emphasized by Alvarez,[1] who notes that the promptness with which a mouthful of food introduced in the stomach causes material to pass through the ileocecal valve or to rush through the colon shows that the human intestine exhibits the characteristic long-distance reflexes.

1. Alvarez, W. C.: The Motor Function of the Intestine from a New Point of View, THE JOURNAL A. M. A., July 31, 1915, p. 388.
2. Hertz, A. F.: Jour. Physiol., 1913, vii, 55.

Every one can recall the desire for evacuation which is frequently felt after a liberal meal. In children the movement of the bowel soon after feeding is familiar. Both adults and children have schooled themselves to repress the natural postprandial impulses to defecate; these impulses are not compatible with our social engagements. Custom in this respect is regulated by convenience rather than by physiologic considerations.

The question may well be raised whether this disregard of natural stimuli is not a potent factor in the widespread manifestation of constipation. Undoubtedly, habitual response to the normal incentives to defecation soon after the introduction of food into the stomach would be a wholesome reform. The facts of physiologic science speak for it. The roentgenologist knows that a contrast meal will go down the bowel faster if followed, a few hours later, by food. The effect of more than one stool per day, moreover, would bring timely relief from those all too familiar symptoms of malaise which have made us a nation of "pill-loving" sufferers. Of course, the "patent medicine" interests would suffer, but the bowel of man, which, according to Keith, contains enough muscular tissue in its colonic wall to form a mass as large as the biceps of a blacksmith's arm, ought to be expected to do its duty unaided.

Current Comment

BACTERIA IN THE AIR

To the air has long been attributed a subtle potency to incite disease when suitable conditions prevail. One need not go back far in history to reach the days when "night-air" and "sewer-air" were feared as the bearers of indefinable dangers to health. The discovery of the rôle of micro-organisms in the transmission of disease has largely changed this attitude. It is true that air from certain localities, such as soils or sewers, may contain an admixture of gaseous impurities—carbon monoxid and dioxid, marsh gas and hydrogen sulphid—which are not wholesome to the organism. But these admixtures are, in all except the most unusual circumstances, so small in amount as to have little if any harmful significance for health. The organic or solid impurities of the air give more cause for alarm, for they include the living bacteria. In sewer-air the proportion of micro-organisms is usually less than that of streets and houses, and they are usually harmless species. The movement of air in sewers is rather slow, so that abundant opportunity is afforded for the suspended particles, including the living agents, to become deposited on the moist surfaces. The gaseous components of the air are of secondary moment. There is a growing conviction, however, that in the majority of cases of so-called "air-borne" disease it is not the particulate constituents of the atmosphere that are directly responsible for the transmission of disease. Suspended particles, including bacteria, may, of course, be sprayed about by the acts of coughing and sneezing and thus aid in the dissemination of diseases, particularly those of the respiratory tract. But as a rule it appears that the diseases conveyed through the air are carried through the agency of insects acting as vectors or as hosts for the infective parasites. In many hospitals, therefore, the "air-borne" diseases are now treated side by side in the same ward without fear of greater transmission than if they were isolated in separate wards. Attention is centered on the possibility of the carrier agency, animate or inanimate, rather than on the atmosphere as such. As a recent speaker expressed a phase of it, the problem is one of wire screens more than of ventilation. It is, however, of interest to learn something regarding the prevalence of bacteria in the air of different regions. A recent systematic study by the New York State Commission on Ventilation[1] showed clearly that the air of occupied spaces such as factories, schools and offices contains more bacteria than that of open spaces in the city or country. It is significant that the increase in streptococci manifests itself promptly in the occupied spaces. Whereas in country or city air there are rarely more than ten of this group of micro-organisms per hundred cubic feet of air, the number may rise to more than forty in factories. There is a rapidly growing tendency, supported by much convincing evidence, to teach that ventilation has nothing whatever to do with either the transmission of the so-called "air-borne" diseases or the lessening of their transmission. Furthermore, the opinion is freely expressed that transmission by way of the air is of infinitely less importance than transmission by inanimate and animate carriers that have been in intimate contact with patients.[2] Nevertheless, the indisputable facts just cited regarding the comparative distribution of certain objectionable bacteria in occupied spaces still deserve respectful consideration in relation to the problems of public health.

MEDICAL MEN AS COLLEGE PRESIDENTS—WILBUR PRESIDENT OF LELAND STANFORD

In three instances during the last few years, medical men of national reputation have been selected as presidents of prominent universities. In 1913 Dr. Frank Fairchild Wesbrook was elected president of the newly established University of British Columbia at Vancouver. Dr. Wesbrook had for several years been dean of the University of Minnesota, College of Medicine and Surgery, where he had shown a remarkable administrative ability. He had been professor of pathology and bacteriology in that institution for eighteen years, and was also a prominent figure in various public health movements, having been elected president of the American Public Health Association in 1905. At the beginning of the present year Dr. Livingston Ferrand was elected president of the University of Colorado. Dr. Ferrand for several years had been the

1. Browne, W. W.: Bacteria in City, Country and Indoor Air, Science, Sept. 10, 1915, p. 351.
2. Cf. Abbott, A. C.: Ventilation in Its Relation to Air-Borne Disease, Science, Sept. 10, 1915, p. 358.

executive secretary of the National Association for the Study and Prevention of Tuberculosis, and the marked success of this body was largely due to his ability as an organizer and administrator. Word has now been received that Dr. Ray Lyman Wilbur of San Francisco has been elected president of Leland Stanford Junior University, a chair occupied until 1913 by David Starr Jordan and since that time by John Casper Branner. The latter accepted the chair with the understanding that a successor should be elected in 1915, when he would have reached the retiring age of 65. Dr. Wilbur has demonstrated a remarkable ability as an organizer and as an administrator, having occupied the deanship of Leland Stanford Junior University, School of Medicine, since 1910, and the chair of medicine since 1899. He has taken an active part in the discussion of educational problems during the last several years. The selection for the presidency of prominent universities of men who are familiar with the problems of medical education and public health gives promise of a deeper interest in those problems by the educators of the country and will lead to a wider dissemination among the people generally of information in regard to hygiene and the prevention of disease. The experience these men have had in medical affairs, furthermore, gives them a broad view which will aid them in their administrative duties, particularly in the last two universities, which have medical departments.

PUBLIC HEALTH PROPAGANDA IN CHINA

The spread of the educational propaganda in public health work is strikingly illustrated in articles in the July number of the *China Medical Journal*, the greater part of which is given up to a discussion of this subject. Dr. Arthur Stanley, health officer of China, discusses "How to Initiate Public Health Work in Chinese Cities"; Dr. Wu Lien Teh, medical officer to the Foreign Office of Harbin, "Awaking the Sanitary Conscience of China"; Dr. E. S. Tyau, "A Plea for a Campaign of Public Health Education in China," and Dr. W. W. Peter of the Council on Public Health, "Public Health Education in China." Evidently the problems, difficulties and remedies adopted differ surprisingly little from those in our own country. Dr. Teh, for instance, after enumerating the many insanitary customs of the Chinese, says that they have for centuries practiced a system of simple hygiene peculiarly adapted to their needs. They wear suitable clothes for summer and winter, drink tea, avoid alcohol, eat cooked food and are moderate in many things. The result is that many diseases frequently occurring in Europe and America are distinctively uncommon in China. Instruction through the public schools and the churches is recommended; and also the organization of the women of the community for public health work. Educational exhibits of photographs, charts and instructions in Chinese are also used. The Chinese prototype of the "Save the Babies" pamphlet, printed in large quantities and distributed by the American Medical Association, is an exhibit chart in Chinese characters entitled "Shelter the Babies." Wire screening, fly traps, "patent medicine" advertisements, lantern slides, illustrations and other educational methods are being used. Bulletins are being sent to the teachers and pupils in mission schools, and every effort is being made to develop public health sentiment among the people. Certainly the gospel of good health is being widely preached when China begins to educate her millions.

A NATIONAL ENTRANCE EXAMINATION BOARD

During the week beginning June 19, 1915, under the auspices of the College Entrance Examination Board, 4,941 high school students were examined for entrance to eighty-two colleges and universities, of which thirty-two had medical departments. The examination covered seventeen subjects, for each of which three examiners had been selected, two being teachers in colleges and one a teacher in a secondary school. Altogether, therefore, there were fifty-two examiners, experts in their various subjects, who prepared the questions. The examinations were held simultaneously in thirty-eight states of this country, altogether in 154 different localities. The examination in each city was given at some educational institution, under supervisors and proctors selected by the secretary of the board. After the examination papers were completed, they were placed in charge of readers who did the grading. This year 166 readers were appointed, and of these, seventy-nine were representatives of colleges and eighty-five were representatives of secondary schools. In fees from candidates examined, $26,090 was received. For the preparation of the questions and other services the fifty-two examiners were paid $1,719 for salaries and expenses; for grading the papers, the 166 readers were paid $15,254 for salaries and expenses; for supervision of the examinations and for proctors, $3,650 was expended for salaries and expenses.[1] Here we have an examining board which for fifteen years has been conducted on a nearly self-supporting basis; which gives a thorough, reliable examination recognized — so far as we have been able to learn — by all colleges and universities. The board will arrange to conduct its examinations in any locality where five or more applicants can meet, thereby making them convenient for the student, who is free to seek admission to any college of his choice. Since the opportunity to take a well-conducted and reliable examination has thus been made so convenient, one wonders why all examinations in high school branches could not be conducted by this board. It would do away at once with confusion of standards and ratings resulting from the multiplicity of agencies now conducting "examinations" and issuing "certificates," the value and reliability of which are so uncertain. Here is an examination of known quality to replace uncertainties. Here, indeed, seems to be the solution of what is still one of the gravest problems of medical education — the securing of a thorough and reliable "equivalent" credential by those who have not been fortunate enough to complete courses in

1. Those interested in preliminary examination should read the Fifteenth Annual Report, which may be obtained from the secretary of the board, Dr. Thomas S. Fiske, Substation 84, New York City.

standard high schools or colleges whereby they could be excused from examination. Meanwhile, the organization and methods of the College Entrance Examination Board also furnish many practical suggestions which would be of value if the organization of other examining boards, national in scope, should be deemed advisable.

RABIES

The modest report[1] of the results of antirabic inoculation at the Pasteur Institute in Paris for 1914 is another reminder that this classic therapeutic procedure of the great French scientist has brought down the mortality of a dreaded danger almost to the vanishing point. It is safe to say that the probable mortality of the usual run of cases untreated by the Pasteur method would be far more than 16 per cent. In 1912, 1913 and 1914, there were treated successively, in the original institute, 395, 330 and 373 persons, without a single death. Could anything speak more eloquently of this invaluable contribution to mankind which has made it possible to save, literally, thousands of persons in the few years that have intervened since those eventful days in the summer of 1885 when the first patient received antirabic treatment in Paris? The fact that among human beings rabies is no longer common in civilized countries, because early preventive antirabic treatment is successfully applied in almost all infected subjects, ought not to be allowed to obscure the danger of infection which is still possible. A remark attributed to Pasteur and reported by Sir Victor Horsley before the Royal Commission on Vivisection in 1907 deserves to be quoted because of the still timely advice contained in it. "The freedom of England from rabies," said Horsley, "I take to be one of the great achievements of modern science: and we owe it entirely to M. Pasteur. . . . I had the honor of acting as secretary of a committee that was appointed by the government to inquire into M. Pasteur's treatment; and, when the committee was in Paris, M. Pasteur said to us, 'Why do you come here to study my method? . . . You do not require it in England at all. I have proved that this is an infectious disease: all you have to do is to establish a brief quarantine covering the incubation period, muzzle all your dogs at the present moment, and in a few years you will be free.'" The passing of the muzzling act and rigid legislation regarding the importation of dogs have caused a practical eradication of rabies in England. This was largely due to Pasteur's influence. Shall other civilized countries continue to neglect the obvious duty of stamping out rabies, and to require the maintenance of special institutes to provide for emergencies largely within the control of suitable preventive measures?

1. Viala, J.: Les vaccinations antirabiques à l'Institut Pasteur en 1914, Ann. de l'Inst. Pasteur, 1915, xxix, 306.

Maternal Impressions.—Maternal impressions and prenatal culture are not facts, but superstitions. To realize their falsity, no deep researches are necessary; nothing more is needed than a knowledge of some elementary facts and scientific thought about those facts.—*Jour. Heredity.*

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

DELAWARE

Physician Receives Verdict.—Dr. Evan W. Roberts, Milford, received a verdict of $2,000 against the Queen Anne Railroad, October 23, on account of injuries received when the automobile in which he was riding was struck by a train.

New State Society Officers.—The one hundred and twenty-sixth annual meeting of the Delaware State Medical Society was held in Wilmington, October 12, and the following officers were elected: president, Dr. George I. McKelway, Dover; vice president, Dr. James T. Massey, Viola (reelected); secretary, Dr. George W. K. Forrest, Wilmington (reelected); and treasurer, Dr. Samuel C. Rumford, Wilmington (reelected). The society approved the establishment of a national board of medical examiners. The subject of the presidential address delivered by Dr. Henry W. Briggs, Wilmington, was "The Physician, Past, Present and Future."

DISTRICT OF COLUMBIA

Washington Health Rules.—A booklet entitled Washington Health Rules has been published by the Association for the Prevention of Tuberculosis of the District of Columbia. The book contains twelve chapters, each of which is based on one of the health rules first promulgated by the association in 1912. The booklet is to be placed in the hands of each teacher in the public schools.

The Evolution of Man.—Dr. Ales Hrdlicka, curator of anthropology in the National Museum, delivered an address before the Anthropological Society of Washington and the Medical Society of the District of Columbia, October 13, in the medical school building of George Washington University on "The Evolution of Man in the Light of Recent Discoveries and Its Relation to Medicine."

Personal.—Dr. Howard Fisher, Washington, has returned after several months of hospital work in Europe.——Dr. and Mrs. James McKee celebrated their golden wedding anniversary, October 12. Dr. McKee is a Civil War veteran and has been connected with the medical division of the Pension Bureau since 1902.——Dr. Lewis J. Battle, chairman of the medical committee which served during the Grand Army of the Republic encampment, was the guest of honor at a banquet given by the medical men on his committee, October 7. Nearly 100 local practitioners were present and Dr. A. Barnes Hooe presided as toastmaster.——Dr. Frank Fremont-Smith, while examining a revolver at his summer home at Bar Harbor, Me., was accidentally shot, but is making satisfactory progress toward recovery.——Dr. George von Pullinger Davis, Washington, has gone to Salt Lake City as professor of physiology in the University of Utah.——Under the auspices of the National Society of Keep Wells, Dr. William T. Davis, Washington, gave a talk in the parish hall of St. John's Church, October 29, on "The Eye—Its Uses and Abuses."

FLORIDA

Object to Occupation Tax.—Physicians of Tarpon Springs have asked the city council to exempt them from the medical license fee of $10 per annum, stating that they do sufficient charitable work to warrant this exemption.

Health Trains Soon in Operation.—The three Pullman cars which are being fitted up for the traveling exhibit of the State Board of Health are ready for the installation of the apparatus and should be ready to start on the first trip early this month. Every town in the state will be visited and demonstrations and lectures will be given.

Hospital Notes.—On September 27, application was made to the judge of the Circuit Court of Escambia County, for a charter incorporating the Pensacola Hospital.——The Pensacola Hospital was opened to receive patients, September 1, and is now in full operation.——The School for Nurses of the Pensacola Hospital was opened September 15. Twenty nurses have been enrolled for service, five of whom are pupil and nine probation nurses.——The Clearwater Hospital, built

by the city of Clearwater at an expense of $25,000, and having an endowment of $100,000 given by Mr. M. F. Plant, will be opened this month.——Physicians and surgeons of Marianna and Jackson County are making plans to build a hospital in Marianna during the coming winter.——The City Owned Hospital Association was organized at Jacksonville, September 6, Dr. Mark B. Herlong being elected president, and Dr. Marvin H. Smith, secretary.——Plans for the Miami hospital have been approved by the directors and there is $50,000 available for construction, $30,000 of which is in the possession of the city, while bonds have been issued for the remaining $20,000.

ILLINOIS

Citizen Gives Medical Books.—A citizen of La Salle has made a gift to the Public Library of $10,000, the interest of which is to be used for buying medical books.

Superintendents Association Meets.—At the annual meeting of the Association of Superintendents of State Charitable Institutions held in Springfield, October 12, Dr. Henry J. Gahagan of the Elgin State Hospital was elected president, and Dr. William F. Schulz, superintendent of the Chicago Industrial Home for the Blind, secretary.

Foot and Mouth Disease.—The state supreme court has now issued an opinion, October 27, that the state board of live stock commissioners have the right to kill all cattle afflicted with foot and mouth disease. The state veterinarian, however, says that if the herd of Mrs. Scott Durand is found free of the disease, they will be spared.——Foot and mouth disease was discovered in five new localities in McDonough County, October 27, and on the following day, 108 head of cattle and 500 hogs belonging to Samuel Dougherty, and valued at $28,000, were slaughtered.

Scarlet Fever.—At Decatur an extensive epidemic of scarlet fever has existed for some time. On account, it is said, of the failure to cooperate on the part of the medical profession, the local health authorities have been unable successfully to cope with the epidemic. At the meeting of the city council, October 13, it was voted to employ an expert physician to assist in eradicating the disease. For this position, Dr. H. L. Wright, formerly of the health department of Chicago, was suggested and authority was given to employ Dr. Wright.——Dr. Charles E. Crawford of the State Board of Health has ordered school, churches and motion-picture shows in Pecatonia closed on account of the increasing number of cases of scarlet fever in the city.

Personal.—Dr. John R. von Achen, Peoria, has been appointed deputy coroner of Peoria County.——Dr. Joseph P. Comegys, Rock Island, fractured his arm while cranking his automobile, October 27.——Dr. Ben B. Griffith, secretary of the State Board of Health of Springfield, has resigned. ——Dr. John D. Mandeville, Champaign, is reported to be seriously ill in the Julia F. Burnham Hospital in that city. ——Dr. Wiliam S. Holliday, Monmouth, was operated on for appendicitis at the Monmouth Hospital, October 23, and is reported to be doing well.——Drs. William H. Maley and William O'R. Bradley have been appointed local surgeons of the Illinois Traction System in Galesburg.——Dr. Oliver O. Dyson, state veterinarian, who has been ill with typhoid fever at his home in Springfield, is convalescent and has returned to his duties, including the supervision of the state fight on foot and mouth disease.

Chicago

Personal.—Drs. Joseph M. Blake and George R. McAuliff were painfully injured in a collision between the automobile in which they were riding and an auto truck, October 25.

Psychopathic Clinic.—The first municipal psychopathic clinic was opened this week at the Iroquois Memorial Hospital under the direction of Dr. Harold N. Moyer, head of the psychopathic division of the new school of sanitary inspection of the department of health.

Physicians' Club Meets.—At the first meeting of the season of the Physicians' Club of Chicago at the Hotel Sherman, October 19, Municipal Judge Jacob H. Hopkins, John L. Whitman, superintendent of the Bridewell; Emory Sanford Hall, the architect, and Miss Harriet Vittum of Northwestern University Settlement, were the speakers.

Industrial Safety.—Physicians interested in the forming of the health and safety of industrial establishments in the state met at the City Club, October 15, for the organization of the National Association of Industrial Physicians and Surgeons. The committee having this matter in charge is composed of Drs. J. Chase Stubbs, Harry E. Mock, Andrew M. Harvey, Wilber E. Post, F. M. McCurdy, William C. Lucas and C. G. Farnum.

INDIANA

Chiropractor Fined.—It is reported that William H. Monks, a chiropractor, was fined $25 by a jury in the Indiana Circuit Court, recently, for practicing medicine without a license. It is stated the case will be appealed to the supreme court.

Personal.—Dr. Herbert M. Senseny has been appointed local surgeon for the Nickel Plate System at Fort Wayne. ——Dr. John Richards, for fifty-three years a practitioner of Laud, celebrated his eightieth birthday anniversary, October 21.——Dr. John Herman Wylie and wife, formerly of Bluffton, sailed from San Francisco for China, November 6. Dr. Wylie's new post of duty will be in a hospital established in North China by the Rockefeller Institute.——Dr. John P. Franz, Indianapolis, was painfully injured in a collision between his automobile and a street car, recently. ——Dr. Henry P. Metcalf, New Salem, was thrown from his automobile and seriously injured, recently.——Dr. Guy A. Schultz, Lebanon, has declined appointment as assistant surgeon to the National Soldiers' Home, Johnson City, Tenn.

MARYLAND

Faculty Changes.—At the meeting of the faculty of the School of Medicine of the University of Maryland, Drs. Ridgley B. Warfield, Gordon Wilson, William S. Gardner, Harry Friedenwald and Arthur M. Shipley were elected members of the executive committee; Dr. Randolph Winslow was elected president of the faculty; Dr. John W. Chambers, vice president; Dr. James M. H. Rowland, secretary, and Dr. Samuel K. Merrick, treasurer.

Personal.—Dr. Lewis C. Spencer and Dr. Martillus H. Todd of the American staff of surgeons at Pau Hospital base in France have returned to Baltimore. Both physicians were on the staff of the Johns Hopkins Hospital until their departure for Pau.——Dr. Marshall B. West, health officer of the first district of Baltimore County, is confined to his home in Catonsville with a badly infected hand. He is reported as being slightly improved.——Dr. William F. Lockwood has been selected as dean of the School of Medicine of the University of Maryland, succeeding Dr. R. Dorsey Coale, deceased.

To Fight White Plague.—Following discussions of the question of tuberculosis in Baltimore and the means needed to hold it in check, steps were taken recently at a meeting in the Medical and Chirurgical Faculty Building to organize physicians, nurses and social workers engaged in fighting tuberculosis not only in the city, but in the state. The meeting and the action that grew out of it were the results of an effort of those engaged in preventive and curative work among tuberculosis patients to bring about a standardization of methods and to facilitate exchange of data and thus minimize duplication. Dr. Henry Barton Jacobs, president of the Maryland Association for the Prevention and Relief of Tuberculosis, acted as chairman of the meeting and at its conclusion appointed a committee to elect officers and organize the new body, the committee being formed of the heads of the various medical and social organizations for the relief of this disease.

MICHIGAN

Municipal Hospital Opened.—The new Municipal Receiving Hospital at Antoine and McComb streets, Detroit, which has been erected at a cost of $250,000, was formally opened October 12. The building will accommodate 135 patients and will be under the charge of Dr. Leo J. Dretzka. The main objects for this hospital are the provision of a clearing house for emergency cases and of a psychopathic ward for the mentally disturbed.

Personal.—Dr. George A. Trueman was elected mayor of Munising, October 17.——The resignation of Dr. Marinus L. Holm, Lansing, as bacteriologist for the branch laboratory of the State Board of Health at Houghton, has been accepted. ——Dr. Samuel E. Barnhart, Battle Creek, who was seriously injured, September 26, at Pomona, Calif., in a collision between his automobile and a railway train, the injuries including the fracturing of both arms and seven ribs, is reported to be convalescent and has returned to Battle Creek.——Dr. Albert F. Stone, Bay City, caught his left hand in the gearing of the self-starter of his automobile, September 30, sustaining injuries, which necessitated the amputation of the terminal phalanges of the first and third fingers.

MISSOURI

Recognition Withdrawn.—It is reported that the Missouri State Board of Health, by unanimous vote at a meeting held October 18, declared the University of West Tennessee Medical Department of Memphis an unaccredited medical college in the state of Missouri.

New Public Clinics.—Public clinics for diseases of the eye, ear, nose and throat and for genito-urinary diseases, have been recommended by Dr. Paul Paquin, director of public health of Kansas City. Both of these clinics will be held at the Waterworks Building.——The dental clinic is to be transferred to the Karnes School.

Personal.—Dr. John A. Pringle, assistant superintendent of the Springfield City Hospital, has been appointed temporary superintendent, succeeding Dr. Frank E. Chapman, resigned.——Dr. Lincoln C. Chenoweth, Webb City, has been elected a member of the Board of Control of the Jasper County Tuberculosis Sanatorium.——Dr. George I. Mays, Joplin, who has been seriously ill in St. Vincent's Hospital, New York City, is reported to be improving.——Dr. Vincil B. Janes, Cameron, was seriously injured in a railway accident near Sheldon, recently.

St. Louis

Clinic Club Organized.—The St. Louis Clinic Club was organized, October 12, with about twenty charter members. Dr. George Richter was elected president, and Dr. Frederick A. Baldwin, secretary treasurer.

Personal.—Dr. Ellen M. Osborn was thrown from her buggy, October 20, by a collision with a coal wagon, and suffered a fracture of the nose and severe contusions of the face.——Dr. Leo Loeb has been appointed professor of comparative pathology in the medical school of Washington University.——B. Landis Elliott, instructor in physiology in Washington University, is reported to be ill with trichinosis in Barnes Medical Hospital.

NEW YORK

Vassar College in Welfare Work.—The students of Vassar College have raised a fund of $1,200 to support a district nurse for the town of Poughkeepsie.

Personal.—Dr. Henry L. Elsner is ill at his home in Syracuse.——Dr. Andrew R. Ellis, Roxbury, has been obliged to give up his medical practice on account of ill health and has moved to Livingstonville.

Lectures on Oral Hygiene Discontinued.—The State Department of Health announces that as the legislature made no appropriations for the services of the two lecturers on oral hygiene hitherto attached to the staff of the department it is necessary to discontinue this valuable work.

Boarding Houses for Tuberculosis Patients.—The state aid charities association and the committee on the prevention of Tuberculosis of the charity organization society of New York City have prepared a list of country boarding houses for tuberculosis patients to which any one interested can have access.

Popular Health Lectures.—The first of a series of public health lectures which the Albany Medical College has offered to the public was given October 13 in the auditorium of the State Education Building, Albany, by Dr. Herman M. Biggs, health commissioner of New York, on "The Public Health Law of New York State."

Municipal Piggery for Saranac Lake.—The Saranac Lake Board of Health proposes to establish a municipal piggery in which to dispose of properly sterilized garbage from the village. It is believed that the piggery will produce a revenue that will pay for the cost of garbage collection. This experiment is attracting wide attention throughout the state.

New York City

Harvey Society Lecture.—The second lecture of the Harvey Society series given at the New York Academy of Medicine, November 6, at 8:30 p. m., is by Prof. A. J. Carlson of the University of Chicago on "Recent Contributions to the Physiology of the Stomach."

Dr. Goldwater Quits Health Department.—Dr. Sigismund S. Goldwater, who has been commissioner of health for the past two years, relinquished the duties of his office, November 1. Dr. Goldwater handed his resignation to the mayor, July 1, stating that he had accomplished about all that he could under present conditions and was desirous to return to his work as head of Mount Sinai Hospital. Dr. Haven Emerson, deputy health commissioner, will succeed Dr. Goldwater.

Loving Cup Given.—Dr. George Chaffee, Bay Ridge, founder of the New York and New England Association of Railway Surgeons, was presented with a handsome silver loving cup by the association at its twenty-fifth annual session, October 21. The cup bears the following inscription: "Presented to Dr. George Chaffee, Founder, Ex-President and Corresponding Secretary of the New York and New England Association of Railway Surgeons, by the Ex-Presidents in Grateful Recognition of Twenty-Five Years of Devotion and Loyalty to the Association, 1890-1915."

Personal.—Dr. Abraham Sophian has returned from Europe.——Dr. William J. Maloney, who was seriously wounded while serving with the British troops at the Dardanelles, sailed for home, October 23.——Dr. Frank D. Jennings, Bushwick, was assaulted near his home, October 20, and rendered unconscious. The reason for the attack is unknown.——Dr. Harold Kniest Faber, formerly of the Rockefeller Institute, has been appoined assistant professor of pediatrics at the Leland Stanford University, San Francisco.

Health Department Strengthens Patent Medicine Ordinance.—At its last meeting the board of health strengthened the Goldwater Formula Disclosure ordinance which is to become effective Jan. 1, 1916. The vital paragraph of the section read: "The names of the ingredients of every such medicine shall be registered in the department of health in such a manner as the regulations of the board of health may prescribe." It was felt that this was not sufficiently clear and in addition certain patent medicine interests having declared their intention of disregarding the ordinance, the above paragraph has been amended to read: "The names of all ingredients to which the therapeutic effects claimed are attributed and the names of all other ingredients except such as are physiologically inactive shall be registered in the department of health in such a manner as the regulations of the board of health may prescribe."

NORTH CAROLINA

Leeward Islands Want Medical Men.—The government of the British West Indies has been advertising in North Carolina papers during the past few weeks, for capable young medical men to serve six months or longer in medical service in the Leeward Islands. These positions offer admirable opportunities for the study of tropical diseases.

Enforcement of Vital Statistic Laws.—The State Board of Health has placed a special agent in the field who will devote his attention to securing the enforcement of vital statistic laws. His work will be chiefly to impress on physicians, undertakers and others, the necessity of filing their reports of deaths and births promptly. In other words, this will be a campaign of education.

Hospital Notes.—The physicians and business men of Greensboro met October 5 to formulate plans for the establishment of a new general hospital in the city.——The Twin City Hospital Association, Winston-Salem, is endeavoring to raise an endowment fund of $100,000 for a city hospital, and the association will contribute $10,000 of this amount, provided the city secures the balance of $90,000.

Personal.—Mrs. R. S. Boyers has been elected municipal health officer of High Point and Mrs. J. E. Sells, health officer of Winstom-Salem.——Dr. Albert Anderson, superintendent of the Raleigh State Hospital, has returned after an extended tour of inspection of psychopathic institutions in the East.—Dr. Edward C. Register, Charlotte, has been elected president of the American Medical Editors' Association.

PENNSYLVANIA

State Board Examination.—The State Bureau of Medical Education and Licensure announced, October 27, that medical examination for state licenses would be held at Philadelphia, January 18 to 20.

Laboratory for Allegheny General Hospital. — It is announced that the children of the late William H. Singer, Pittsburgh, will erect, equip and endow in his memory at a cost of $400,000, a research laboratory in connection with the Allegheny General Hospital.

Tuberculosis Home Opens.—The new buildings of the department for the treatment of tuberculosis of Allegheny County at Woodville, Pittsburgh, were dedicated September 2. The camp is situated on a hill about a mile from the main buildings of the county home.

Philadelphia

Medical Institutions.—The department for diseases of the chest of the Jefferson Hospital, 236 and 238 Pine Street, has opened a pay ward to a limited number of male patients suffering from pulmonary tuberculosis.

Personals.—Dr. Luther C. Peter has been elected associate professor of diseases of the eye in the Philadelphia Polyclinic and College for Graduates in Medicine.——Dr. Charles A. E. Codman, president-elect of the Medical Society of the State of Pennsylvania, was tendered a dinner and reception by the West Philadelphia Medical Association at Hotel Rittenhouse, October 26. Dr. John Welsh Croskey, president of the society, was toastmaster and spoke of the movement under way to make Philadelphia a world medical center and urged those present at the dinner to work toward this end.

WEST VIRGINIA

Trachoma Hospital Opened.—Surg. John McMullen, U. S. P. H. S., opened a trachoma hospital at Welch, October 4, with accommodation for twenty patients, and it was almost filled from the start.

Smallpox.—In a bulletin of the West Virginia Public Health Council, Dr. S. L. Jepson, State Health Commissioner, says, that in the past three years West Virginia has had 7,000 cases of smallpox and so far as has been ascertained, only 2 per cent. of these persons had ever been vaccinated. It is said that the most intense prejudice against vaccination exists in all parts of the state, based on false reports and erroneous beliefs as to the injurious results alleged to follow vaccination. Among the foolish and misleading reports was one that a number of patients had been taken to Wheeling to have their arms amputated as a result of vaccination. This report, Dr. Jepson says, was entirely baseless, and in more than forty years of experience in the practice of medicine, he had never seen as a result of vaccination anything worse than a sore arm. He calls attention to the vast financial loss to the state on account of this ignorance and prejudice which has resulted in the expense of quarantine and caring for the 7,000 cases during three years. Local health officials have been instructed by the State Health Council no longer to establish quarantine, but merely to placard the houses containing smallpox patients. It is said that if unvaccinated persons persist in refusing such a simple but positive preventive, there is no reason why the people in general should be taxed rigidly to quarantine and guard houses for their sole benefit.

WISCONSIN

Kenosha Sanatorium Nearly Ready.—The Kenosha County Sanatorium, which is being erected on an 87-acre site at a cost of $32,000, will be ready to receive patients December 1. The institution will accommodate twenty-four patients.

Sterilizing Law to Be in Effect.—The Wisconsin sterilization law, passed by the legislature of 1913, will, it is said, be put into actual operation by the State Board of Control in November when twenty-four inmates of the Home for the Feeble-Minded, Chippewa Falls, will be operated on. The work, which is being carried on in an effort to cope with the problem of stopping the propagation of children by feebleminded and degenerate parents, will be continued as fast as circumstances will permit.

War on Quacks.—A war on "quack" doctors and "fake" medical institutes in Milwaukee has been begun. Arrangements have been made by the health department for free consultation and advice in connection with venereal diseases for all those who apply at the bacteriologic laboratory of the health department in the city hall. Dr. E. V. Brumbaugh of the health department will be in attendance. Following the plan adopted by New York City, no remedies will be prescribed, but those asking advice will, after the diagnosis is made, be urged to consult reputable physicians for treatment.

CANADA

Saskatchewan Hospital News.—A medical staff will be organized in connection with the Regina Grey Nuns' Hospital. A new nurses' home has recently been completed and will shortly be occupied. The necessary funds for the Saskatchewan Hospital Unit are now nearly in sight and only final instructions are awaited from the Imperial Government before proceeding with the work of organization.——The Isolation Building in connection with the Regina General Hospital is to be used for a nurses' home until a new building is completed.

Defectives in Toronto.—Dr. Charles K. Clarke, superintendent of the Toronto General Hospital, has dealt with 1,000 mental defectives, a great percentage of whom are juvenile criminals, at his clinic for feeble-minded children. It has been impossible to confine the clinic to children and he now treats adults. All efforts to obtain assistance from the provincial government and the Toronto civic authorities having proved fruitless, no very great results can be expected. Dr. Clarke states he has barely touched on the great number of criminally disposed feeble-minded adults and children. Of those treated during the past year only a few have reached institutions owing to the congested condition of all the provincial institutions for the insane and feeble-minded. He states that juvenile crime in Toronto has increased 100 per cent.

Personal.—Dr. Thomas C. Brandon, Watford, Ont., has been appointed surgeon in the British service and will leave in a few days for the front.——Dr. James Gow, Windsor, was painfully injured in a collision between automobiles, October 1.——Dr. Joseph A. Andrews, Indian Harbor, Labrador, reached New York, October 1, and reports that an epidemic of beriberi has existed among the natives of Indian Harbor.——Sir Wilfred Grenfell of Labrador was one of the speakers at the Interdenominational Medical Missionary Conference at Battle Creek, November 2 to 5.——Lieut.-Col. Henry R. Casgrain, Windsor, Ont., in charge of No. 3 Stationary Hospital at Alexandria, Egypt, reported seriously ill, is now on his way back to England. Just before sailing news of his condition was reassuring.——Drs. Vanwycke and Crompton of Toronto were added to the staff of the University of Toronto Base Hospital as captains before the unit sailed for the Mediterranean on October 16. Lieut.-Col. P. Walter H. McKeown of Toronto did not accompany the hospital but remained in England as president of a medical board to advise the pension board. Dr. Thomas G. Brodie returned to Toronto; Dr. Alfred H. W. Caulfield remains in London, and Dr. J. George A. Campbell who is ill will remain in England for a month or two.——Dr. Harry Morell, editor of the *Western Medical News*, Regina, Sask., is at present attached to the Canadian Red Cross, Duchess of Connaught Hospital, Taplow, Bucks, England. He is in charge of the pathologic department. The hospital has accommodation for 1,000 patients.

GENERAL

McCoy to Succeed Anderson.—Surgeon-General Rupert Blue, U. S. P. H. S., has announced the appointment of Surgeon George W. McCoy as director of the Hygienic Laboratory, Washington, succeeding Surgeon John F. Anderson who recently resigned to accept private employment. Dr. McCoy is at present in charge of leprosy work at Molokai, Hawaii.

Leprosy in the United States.—In an address made by Dr. William A. Pusey, Chicago, before the Chicago Medical Society, October 27, he stated that there are about 500 cases of leprosy in the United States, of which 275 were in Louisiana, 100 in New York City, 50 on the Mexican frontier and 5 in Chicago. He advocates the establishment of a general leprosarium.

Railway Surgeons Hold Meeting.—At the annual meeting of the Railway Surgeons' Association of Pennsylvania Lines East, in New York City, October 18 to 20, the following officers were elected: president, Dr. James B. Siggins, Oil City, Pa., vice president, Dr. Charles J. Roberts, Berwyn, Pa.; secretary, Dr. Amos W. Colcord, Clairton, Pa., and treasurer, Dr. Joseph C. Egbert, Wayne, Pa.

Accident Board Officers Elected.—At the meeting of the National Association of Industrial Accident Boards and Commissions, held in Seattle, October 2, Floyd L. Daggett, Olympia, was elected president; Wallace D. Yaple, Columbus, Ohio, vice president, and L. A. Tarrell, Madison, Wis., secretary treasurer. It was decided to hold the next annual meeting in Columbus, Ohio, April 25 to 28, 1916.

Pellagra Conference.—At the third triennial conference of the National Association for the Study of Pellagra held in Columbia, S. C., October 21 and 22, the following officers were elected: president, Capt. Joseph F. Siler, M.C., U. S. Army; vice presidents, P. A. Surg. R. M. Grimm, U. S. P. H. S., and Henry W. Rice, Columbia, S. C.; secretary, Dr. James W. Babcock, Columbia, S. C., and treasurer, Dr. James A. Hayne, Columbia, S. C.

Dakota and Montana Physicians Unite.—Physicians of western North Dakota and eastern Montana met in Williston, N. D., October 19, and organized the Kotana Medical Asso-

ciation, including Divide, Williams, McKenzie and the western half of Mountrail counties, as well as the Montana counties adjoining North Dakota. Dr. Melverton E. Trainor was elected president; Dr. Edward J. Hagen, vice president, and Dr. Frank W. McManus, secretary-treasurer, all of Williston. The next session of the association will be held in Williston.

Social Hygiene Problems Discussed.—At the annual meeting of the American Social Hygiene Association held in Boston, October 8, Pres. Abram W. Harris, Northwestern University, was elected president in the place of Dr. Charles W. Eliot, Cambridge, Mass.——The Central States Conference on Problems of Social Hygiene, under the auspices of the association, was held in Chicago, October 25 and 26, at which the subjects discussed were "The Social Hygiene Movement," "The Education and Moral Aspects of the Social Hygiene Movement," "Public Health," and "The Aspects of the Problem of Prostitution."

Prevention of Infant Mortality.—The preliminary program for the sixth annual meeting of the American Association for the Study and Prevention of Infant Mortality, to be held in Philadelphia, November 10 to 12, is most attractive. The general subjects discussed have been already noted in THE JOURNAL. The Bellevue-Stratford Hotel will be the general headquaters and here all the sessions, with the exception of the joint session with the Philadelphia County Medical Society on Economic Aspects of Infant Welfare, will be held. This latter session will convene at the College of Physicians, November 10 at 8:15 p. m.

Bequests and Donations.—The following bequests and donations have been announced:

Alice Home Hospital, Lake Forest (Ill.), and Lake Bluff (Ill.) Orphanage, each $5,500, the proceeds of the Lake Forest Country Fair.

Chicago Home for the Friendless, residuary beneficiary, and Eastern Maine General Hospital, Bangor, Maine, $5,000, by the will of Luther H. Pierce, Chicago.

Aid Association of the Philadelphia County Medical Society, $5,000, by the will of Dr. Eugene I. Santree.

Cancer Commission of Harvard University, the income from $25,000, by the will of William Endicott.

Cancer Commission in the City of Boston, $23,250, by the will of Julia M. Moselet.

Associated Jewish Charities and Jewish Consumptives Relief Society, Chicago, each $10,000, by the will of Bernard Baumgarden.

University of California, Berkeley, a donation of $10,000, as an endowment for a bed in the University Hospital of the University California Medical School, San Francisco, in memory of his wife, the late Belle Garber Pellache, and her brother, the late Joseph B. Garber, by Whitney Pellache, New Haven, Conn.

Tuberculosis Week.—As has been previously announced by the National Association for the Study and Prevention of Tuberculosis, Tuberculosis Day will this year be expanded into Tuberculosis Week, taking place December 6 to 12. For this week the National Association suggests three special days—National Medical Examination Day, December 8; Children's Health Crusade Day, December 10, and Tuberculosis Sunday, December 12. Circulars describing the general scope, plan and aim of the movement have been prepared and are sold by the National Association at 15 cents per 100. Sermon outlines have also been prepared and are sold at 25 cents per 100. It is suggested that these circulars be placed in the hands of teachers, ministers and others. A special circular on Medical Examination Day will be issued later and also some special literature on Children's Crusade Day. It is said that the object of the National Medical Examination Day is to secure the interest of physicians, employers of large groups of labor and lastly workingmen of all kinds. It is not hoped to have everyone examined on this day, but the object is to arouse interest so that people will be set to thinking about periodical medical examinations. It is suggested that the interest of physicians should be aroused by having the matter presented in the local medical society, where, if the general plan is approved, a wholesale rate of examination during a stipulated period might be fixed at $2.50 to $3, this examination to include a complete physical examination and such bacteriologic and chemical analysis as may be necessary. In Michigan, recently, it is said, at the request of the governor, nearly 500 physicians participated in Tuberculosis Day, making a large number of free examinations of tuberculous patients.

FOREIGN

Typhus in Australia.—According to a dispatch from Melbourne an epidemic of typhus fever has broken out in Victoria, Australia, where 447 cases have been reported with 144 deaths.

Nobel Prize to Vienna Physician.—It has been decided to award the Nobel prize for 1914 to Dr. Robert Bárány of the University of Vienna, on account of his work on the physiology and pathology of the ear.

Wood Alcohol Kills.—In a telegram from Berlin of October 18, it is stated that of 100 workmen, who while shipping wood alcohol from Nijni-Novgorod, Russia, opened a barrel and drank from it, twenty are dead and the remainder seriously ill.

Yellow Fever.—On October 5 it was reported that a young engineer had died from yellow fever in the Ancon (C. Z.) Hospital. The disease was contracted in Colombia.——Under date of October 27, it was reported that yellow fever is epidemic in Buena Ventura, Colombia.

WAR NOTES

Harvard Hospital to Be Continued.—Dr. E. H. Nichols, who organized the Harvard British Hospital at the front, announces that it will be maintained for another year and asks for applications from surgeons, physicians, dentists and nurses who are willing to serve with another Harvard Surgical unit in a British hospital. Transportation charges will be paid both ways and the pay will be the regular army rates with additional allowances. Preference will be given to Harvard medical men and young graduates at hospitals. The term of service will be at least six months. Application should be made to H. H. White, University Press, Cambridge, Mass.

Typhoid Mortality Reduced by Inoculation.—Dr. Leo Bernard reports that out of 800 cases of typhoid fever in French soldiers which he studied, the mortality of those who had been given the antityphoid inoculation was only 5½ per cent., while among the unvaccinated it was 17 per cent. He believes that if the triple inoculation had been made as in this country, the death rate would have been much lower.

American Physicians Decorated.—It is reported from Nish that Crown Prince Alexander of Serbia has decorated forty-three American physicians and sanitary engineers representing the Rockefeller Foundation and the American Red Cross, in recognition of their services in checking the typhus epidemic in Serbia.

Personal.—Dr. B. W. Caldwell and other physicians of the American Red Cross contingent from Serbia passed through Rome, October 29, on their way to Germany by way of Switzerland, to assist in the care of Russian prisoners on German soil.——Drs. Edward Stewart, Ralph W. Mendelson and Stanley Osborn, members of the staff of Lady Paget's Hospital at Uskub, Serbia, are believed to have been captured by the Bulgarians.——Drs. Taylor Jones, Thomas W. Jackson and George W. Mellon, who have been on duty in Serbia, and Dr. M. H. Todd, who has been on duty in a war hospital in France, reached Boston from Europe, October 21.——Drs. W. M. Lacy, W. A. Lane, W. J. Dodd, R. R. Sattler, Channing Simmons and Paul Withington, who went abroad with the Harvard unit, reached New York, October 19.

BERLIN LETTER

BERLIN, Oct. 5, 1915.

Personal

Prof. Adolf von Baeyer, the father of German chemistry, will celebrate his eightieth birthday, October 31. With the beginning of the present semester he retired from his professional duties. He was appointed von Liebig's successor at the University of Munich in 1875, and for forty years he has been actively engaged in carrying on the work begun by von Liebig. Baeyer had much to do with the advancement of chemical knowledge in Germany; in fact, to him is due the credit of having placed it on the high plane it now occupies. Many of our best chemists have been trained under Baeyer. Among these one might mention Emil Fischer and Richard Willstätter; the latter probably will be Baeyer's successor. Baeyer discovered artificial indigo, a discovery on which rests the enormous development of the German dye industry. No other scientific discovery has ever led to such enormous financial and commercial advancement as the investigations made by Baeyer in 1865, which led to the discovery of indigo.

Reorganization of the Berlin Health Department

For many years the Berlin Medical Society has asked that the administration of the local health department be in keeping with the increase in population and the demands of present-day hygiene. The authorities have now met this

demand by making provision for the creation of a city health bureau whose personnel is sufficient assurance for the proper administration of health laws. Nurslings, schoolchildren and recent graduates will receive such attention as should be given them by an adequate health department. Suitable provisions have also been made for the control of tuberculosis, alcoholism, venereal diseases and for the regulation of all hygienic matters pertaining to light, air, water, sewerage, food, housing, etc., the prevention of epidemics, disinfection, and the control of the sanitation of all municipal institutions. The municipal inspection bureau, administered until recently by the late Professor Proskauer, was placed under the jurisdiction of the health department. This department is not under the charge of a director, but of a committee or bureau, the president being the city physician, who is also the chairman of the health board. The health bureau is divided into a medicinal and a social hygiene division. The director of the latter is Professor Grotjahn, a man who has distinguished himself in this field. His writings on social pathology are well known. The director of the medicinal division has not been appointed. The health board has complete control of all health matters, and its decisions are final. All matters pertaining to health, hygiene and sanitation must be referred to this board or bureau. The city physician may attend the meetings of other bureaus in which health questions are under consideration, and participate in the work. He is also privileged to inspect all institutions concerned with hygienic work. He must be kept advised of any health activities participated in by other bureaus, and receive timely notice of all meetings at which such questions will come up for discussion, so that he may make arrangements to be present in person or by proxy.

Infant Mortality Among the German Nobility During the Nineteenth Century

Professor Schlossmann, director of the Children's Clinic in Düsseldorf, has made a study of infant mortality in the reigning families of Germany. His figures show that there has been a consistent and steady lowering of the infant mortality in each decennial period from 1800 to 1900. From 1800 to 1810 the death rate was 13.3 per cent.; in 1850 it was only 6.6 per cent., and in 1870 it was only 3 per cent. Among the older children, those under 14 years, the death rate during the first decade was 24.1 per cent., and in the last decade it was 8.6 per cent. In some families the mortality was extraordinarily high. The highest mortality was found in the house of Nassau. It was 35.1 per cent. In the house of Anhalt it was 30.7 per cent. among all the children, and 23 per cent. among the nurslings. Liechtenstein had only 2 per cent. mortality among its nurslings, and Bavaria 9 per cent. total children's mortality. The conclusion to be reached as the result of these observations is that the mortality among the children of the nobility today is much lower than it was a hundred years ago, and Professor Schlossmann is convinced that the progress made in hygiene is bound to lower these mortality figures considerably, not only among the nobility but among the populace in general. The regulation of infant feeding and the improvements made in housing are the two prime factors concerned in this reduction of the mortality. Schlossmann's findings are in accord with those published some time ago by Max Kemmerich, who showed that the duration of life is greater and the mortality lower among the royal families than it was a hundred years ago. This is also true of the people in general. Kemmerich concludes, therefore, that the oft-made statement that cultural and economic success lead to racial degeneration is wrong, and that the opposite is true.

PARIS LETTER

PARIS, Oct. 7, 1915.

The War

TREATMENT OF ARTICULAR WOUNDS

This was the subject of an interesting discussion at the last session of the Réunion médicale de la IV-e armée. Dr. H. Fresson discussed particularly penetrating wounds of the knee. Care must be taken to avoid death, amputation and ankylosis. Early operation should be the rule in all penetrating wounds of the knee joint, without exception when there is a projectile or foreign body in the wound. Injections of iodoformized ether may be utilized in the exceptional cases of small penetrating wounds without any foreign body or in cases in which penetration is doubtful. This method, without other procedure, has given Fresson three recoveries. Simple arthrotomy is a classical bilateral arthrotomy with deep, long incisions to reach all the pockets; posterior drainage is thus avoided. Gauze drains dipped in iodoformized ether are placed transversely and renewed each day. A plaster and metal splint is placed in position immediately after the operation. During the following period, it is necessary to guard closely against the possibility of purulent fistulas, which must be eradicated, especially on the side of the popliteal fossa. Horseshoe arthrotomy with section of the patellar tendon is indicated (1) in cases of fracture of the patella necessitating an operation on that bone; (2) when bilateral arthrotomy will not give an opportunity to reach the foreign body; (3) when the classic arthrotomy will not be sufficient to arrest the evolution of the arthritis.

Attempts at flexing the knee should be begun as soon as possible. After the operation, the treatment demands great care. The results will be good in proportion as the operation has been performed early.

Dr. Anselme Schwartz, agrégé professor at the Faculté de médecine de Paris, and surgeon of the hospitals, divides articular wounds into three classes from the therapeutic point of view: (1) articular fractures; (2) articular wounds without osseous lesion; (3) articular wounds with slight osseous lesions.

In articular fractures, the treatment is, in the main, the same as in nonarticular fractures: opening up of the soft parts, removal of fragments and foreign bodies, careful cleansing and drainage of the focus. There is, however, one particular which distinguishes articular from nonarticular fractures; this is the necessity, in general, of completing the operation by a complete and regular resection.

Articular wounds without osseous lesions seldom occur except at the knee. Such a lesion is always caused by a very small projectile. There is a small orifice in the soft parts and an articular effusion. In two cases Schwartz has followed the following line of conduct: All is prepared for complete operation; then the course of the projectile is explored. If it leads into the synovial, arthrotomy is immediately performed. If it is doubtful, the course of the projectile is explored under anesthesia, and if it leads into the joint, operation is performed.

Articular wounds with slight osseous lesions are the most delicate cases. Here it is necessary to be guided by certain principles of general surgery: 1. It is permissible to sacrifice bone more freely in the arm, in which mobility is sought, than in the leg, in which the aim is solidity. Resections therefore may be made more liberally in the arm than in the leg. 2. There are certain differences among the various articulations; resections of the elbow and the shoulder and ablation of the astragalus give excellent results. 3. Certain articulations are more easily drained than others. In the knee, lateral patellar incisions, and if necessary, the transverse incision, give good drainage, while it is impossible to drain the elbow well without resection. As for immediate amputation, no matter what the gravity of the case, it ought to be a very rare exception.

Dr. Maurice Chevassu, agrégé professor at the Faculté de médecine de Paris and surgeon of the hospitals, is convinced that for articular wounds the question of time is perhaps most essential of all. Early operations give in general good or excellent results; late operations on the other hand give mediocre or bad results.

INTENSIVE TREATMENT OF SYPHILIS IN THE HOSPITALS

It may be readily understood that much interest is felt at present in reducing to a minimum the duration of the stay in hospital of syphilitic soldiers affected with contagious manifestations, in order that they may be sent back to the ranks as soon as possible. In a previous letter (THE JOURNAL, Aug. 28, 1915, p. 813), I mentioned a report from Drs. Dalimier and Debat on the treatment of syphilitic manifestations in soldiers by short and intensive courses of arsenic and mercury. Dr. André Bernheim has recently reported to the Société de médecine de Paris the technic which he employs in the service organized by Professor Gaucher and directed by Dr. Butte at the Chaptal Hospital. An injection of 0.03 gm. of mercury benzoate (1:100 solution) or red mercuric iodid is given daily. In order to reinforce the action of the mercury and at the same time to hasten its elimination, the patient each day takes a glass of water containing sulphids and every three days takes a sulphur bath. He is given a supplementary ration of a liter (about a quart) of milk. In the course of each meal, he takes a pill containing 1 mg. of arsenic trioxid and 1 mg. of

strychnin sulphate. The patient uses a tooth brush and a tooth powder of mentholated chalk. Every day a nurse paints the gums with a 1:50 solution of chromic acid. During this intensive course, the patient is kept under very close observation, the urine being examined every six days. At the same time the local lesions are actively treated, the chancres being thermocauterized at a short distance and then dusted with calomel, the mucous plaques painted successively with 1:10 silver nitrate and 1:15 chromic acid and papulosquamous syphilids covered with Vigo's plaster [a 20 per cent. mercury plaster]. This intensive treatment may be carried out in any kind of a hospital organization. It permits the cicatrization of chancres in a period varying from five to sixteen days, and mucous plaques and secondary syphilids in fifteen days on an average.

LONDON LETTER

LONDON, Oct. 15, 1915.

The War

THE SUPPLY OF ARMY SURGEONS

The consulting physicians and surgeons to the British expeditionary force in France have issued a statement that they have observed with some regret that many physicians have resigned their temporary commissions in the medical corps. No doubt a considerable proportion of these are recalled to Great Britain by personal and public claims on their services which they could not neglect. After a few months of comparative quiet, some of them have perhaps found the work monotonous. Those physicians who contemplate applying for commissions in the army are asked to consider the matter in another light. In order to insure a successful issue to the war our army and navy must show the greatest patience and tenacity of purpose. The same is true of the work of the medical profession. A similar tenacity of purpose and an equal patience are required in addition to the skill and energy which every battle calls forth. The excitement of great and moving events is necessarily transient, and men must be prepared to do their duty steadfastly during long periods of dulness. Yet it is during these dull periods that the services of the army surgeon are really of the greatest value, though they may be dull and uneventful to himself, and it is during these intervals that he gets into that close touch with officers and men which gains their confidence and gives him an influence without which mere professional knowledge is not of much avail. It is no doubt monotonous to be constantly watchful of the cleanliness of billets, to supervise food, to prevent parasitic infections, to treat sore feet, diarrhea or muscular rheumatism, and to do the thousand and one things which help to keep the soldier an efficient fighting man. But the medical officers who does these things is doing at least as much for his country as the man who performs operations or treats typhoid. The staffs of the field ambulances have also to deal with many minor ailments of little interest, but every division is dependent on them for the rapid return to the regiments of those whose illnesses are too slight to justify a return to England.

THE SIGNIFICANCE OF ABNORMAL SIGNS IN THE RECRUIT'S HEART

At the request of the War Office, Sir James Mackenzie has drawn up a memorandum to serve as a guide to medical examiners of recruits. He points out that the healthy heart in the young can exhibit murmurs, and variations in rate and rhythm, which are perfectly physiologic in origin and indicative neither of disease nor of impairment. Before examining the heart he recommends that the functional efficiency be found out by ascertaining how it responds to effort. This is shown by the amount of exertion the candidate has been accustomed to take in the past in his work or play, and if he can undergo severe bodily exertion without distress. The physiologic murmurs are always systolic in time, and the situation of the greatest intensity may be at the apex, midsternum, or base of the heart. If the candidate's response to effort be normal, and the heart normal in size, the murmur is negligible; for if the cause which produced the murmur hampers or embarrasses the heart in its work, the size of the embarrassed chamber will increase and its functional efficiency be impaired.

Only two forms of irregularity need be considered. Irregularities indicating serious mischief, such as the irregularity of auricular fibrillation or of heart block, will be associated with such diminution of the functional efficiency that the candidate would not seek to recruit. The most common irregularity is that which occurs in the healthy heart of the young. It is characterized by a lengthening and shortening of the pauses between the beats; it will often be found to vary with respiration, the beat increasing in rate during inspiration and decreasing during expiration. When it does not have the characteristic respiratory character it can be made to take on the character if the candidate is made to breathe slowly and deeply for a few minutes. It is frequent in perfectly healthy hearts, and is, therefore, of no importance. In rare cases the pulse may be found intermitting more or less frequently. If the heart be auscultated, two short sharp sounds rapidly following one on the other may be heard during the pause. If this is the only sign present, that is, if the functional efficiency of the heart be good and the size normal, then these extrasystoles are of no significance and the candidate should not be rejected. Many candidates whose hearts are perfectly healthy suffer from palpitation or excited action during examination. The beat becomes forcible and rapid, and a systolic murmur may be present. If such a candidate be told to lie down and breathe slowly and deeply for a few minutes, the heart's action becomes less violent and the rate slows during expiration. With a history of good functional efficiency, the candidate may be considered suitable for enlistment.

CASUALTIES FROM THE ZEPPELIN RAID

A fleet of airships has visited London and the eastern counties and dropped bombs with the following results: Twenty-seven men, 9 women and 5 children were killed, and 64 men, 30 women and 7 children were injured. Of these casualties, 32 killed and 95 injured occurred within the London area.

THE HEALTH OF THE ARMY

Prof. H. R. Kenwood, a well-known authority on hygiene, who has been appointed as an expert to the army in France, has made an interesting report on his branch of the medical work. Early in the war it was considered that the special circumstances demanded some strengthening of the sanitary personnel, and so additional sanitary sections were formed, each consisting of a commissioned officer, four noncommissioned officers and twenty-five men, one section being attached to each division. These sections were recruited from a good class of men, well trained, and including men who had had experience of sanitary work before enlistment; the staff sergeants, sergeants and corporals were generally inspectors in civil life, and the rank and file were mostly from the building and engineering trades; each section had its own motor lorry to carry its equipment. The duties of these special sections ranged from skilled sanitary work, such as disinfection, the purification of water, etc., to the construction of crude incinerators, simple arrangements for the bathing of the troops fresh from the trenches, and scavenging. Their skill has enabled many difficulties to be overcome. Many improvisations have had to be fashioned to suit novel conditions and difficulties, such as the destruction of vermin, the eradication of the fly population in a country which is highly manured under an intensive system of cultivation, the disposal of the carcasses of horses, etc. Steam is used to disinfect clothing and textile articles, and cresol solution is applied to infected surfaces. With regard to the drinking water, the circumstances of the campaign caused special precautions to be taken from the first. The army water carts were originally furnished with batteries of filters, capable of arresting the germs of water-borne disease, and mobile laboratories were equipped with the means of making a chemical and bacteriologic examination of any water supply which it was proposed to issue to the troops. But these precautions were soon supplemented by more effective measures, and since the early days of the war all the water issued has been previously treated as if it certainly contained the germs of typhoid, and in a manner that would effectually dispose of such organisms were they present. In short, the drinking water is chlorinated under skilled direction, and the result is an always safe water supply. The preventive measures against typhoid are as complete as science and ingenuity can devise, and the results have been exceptionally good. Although the figures of the units vary, the large majority of the forces have been inoculated against this disease, and this proved of the greatest value. The noninoculated British soldier is found to be between fourteen and fifteen times more liable to catch typhoid than the inoculated soldier. Precautions against "carriers" are also taken. Mobile laboratories with skilled bacteriologists go from place to place for the systematic examination of the feces of large numbers of men.

Marriages

CLARENCE LEON FESSENDEN, M.D., Fulton, N. Y., to Miss Louise W. Ryder of Roanoke, Va., at Towanda, Pa., October 20.

ARCHIBALD WRIGHT GRAHAM, M.D., to Miss Alecia Madden, both of Chisholm, Minn., at Rochester, Minn., September 29.

FRED WILLIAM ROBINSON, M.D. Sturgis, Mich., to Miss Mildred Leonora Clarke of Milford, Conn., October 16.

WILLIAM DUNCAN MCKIM, M.D., Washington, D. C., to Miss Leonora Jackson, in New York City, October 12.

JAMES STUART PRITCHARD, M.D., Ottawa, Ont., to Miss Myra Bradwell Helmer of Chicago, October 21.

FRANCIS LEO DALY SCANLAN, M.D., to Miss Margaret B. Williams, both of Syracuse, N. Y., October 20.

WALTER GERALD NUESSLE, M.D., Lansford, N. D., to Miss Helen Nippolt of Tacoma, Wash., September 8.

FURMAN LEAMING PYKE, M.D., Lafayette, Ind., to Miss Inez Johnston of LaGrange, Ind., October 20.

WILLIAM E. KISER, M.D., Bellaire, Ohio, to Miss Gertrude Helen Coleman, at Dover, Ohio, October 19.

ALLISON TEMPLE WANAMAKER, M.D., to Miss Mary Helen Allmond Patten, both of Seattle, October 20.

CARL SHEPARD OAKMAN, M.D., Detroit, to Miss Harriet Brooks at San Antonio, Texas, October 20.

EDWARD J. H. SALMON, M.D., to Miss Theresa Kennedy, both of Jersey City, N. J., about August 7.

ARTHUR KNOWLTON DRAKE, M.D., Monmouth, Ill., to Miss Lois Potter of Galesburg, Ill., October 19.

CLARENCE H. BOSWELL, M.D., Rockford, Ill., to Miss Ruth F. Ward of Flushing, N. Y., October 20.

CHARLES L. SCHANG, M.D., Greenville, Pa., to Miss Susie Maxey of Vicksburg, Miss., October 18.

JOHN S. B. WOOLFORD, M.D., Chattanooga, Tenn., to Miss Eliza Winslow of Baltimore, October 23.

HAROLD M. ALLEN, M.D., Norway, Me., to Miss Emily Briggs of Lawrence, Mass., October 20.

JAMES LEROY ANDERSON, M.D., Winfield, Ill., to Miss Clare Leland Kinney, at Chicago, October 14.

GEORGE DAVID CUTLER, M.D., Boston, to Miss Jessie Barr Wright of St. Louis, October 19.

CONRAD B. VONNAHME, M.D., to Miss Mary Rung, both of East St. Louis, Ill., October 31.

PATRICK H. O'MALLEY, M.D., to Miss Elda Sharples, both of Chinook, Mont., October 8.

ROGER PAUL DAWSON, M.D., to Miss Marguerite A. Long, both of Boston, October 20.

Deaths

John Henry Huddleston, M.D. Harvard Medical School, 1891; aged 51; a Fellow of the American Medical Association; a trustee of the New York Academy of Medicine; a member of the American Climatological Society, American Public Health Association, Association of Military Surgeons of the United States, and National Association for the Study and Prevention of Tuberculosis; a director of the Metropolitan Life Insurance Company; visiting physician to Gouverneur and Willard Parker hospitals, and the Riverside Sanatorium; consulting physician to the United Hospital, Port Chester, N. Y.; captain and assistant surgeon, Seventh Infantry, N. Y. N. G., from 1895 to 1907; Carpenter lecturer in 1902; secretary of the American Committee of the Fourteenth International Medical Congress; a trustee of the New York State Hospital for Incipient Tuberculosis; died at his home in New York City, October 30, from pneumonia.

Rear Admiral Joseph Benson Parker, M.D. Medical Director, U. S. Navy (retired). Bellevue Hospital Medical College, 1866; aged 74; who entered the volunteer service of the United States Navy, March, 1863; as an acting assistant surgeon; served in the Mississippi Squadron until his honorable discharge in 1865; and was appoined assistant surgeon, U. S. Navy in November, 1866; whose last services were the command of the Portsmouth (N. H.) Hospital and Navy Yard, the presidency of the Naval Medical Examining Board, Washington, and the command of the Naval Hospital, Washington, and who was retired June 20, 1903, with the next higher grade to that held on active list, on attaining the age of 63 years, after fifteen years and one month sea service and twenty years and six months shore or other duty; died at his home in Philadelphia, October 21.

Edmund C. Rivers, M.D. University of Maryland, Baltimore, 1879; aged 57; of Denver; a well-known specialist on diseases of the eye and ear; president of the board of trustees and professor of ophthalmology in the Denver and Gross College of Medicine, Denver; vice president of the board of directors and consulting oculist to the Denver Maternity and Woman's Hospital Association; while hunting in Barr Lake, near Denver, October 24, was drowned while attempting to save the life of a negro caretaker who was falling from his motor boat.

James A. McGuigan, M.D. Jefferson Medical College, 1862; aged 81; surgeon of volunteers during the Civil War; died at his home in Philadelphia, October 21, from heart disease. On March 8, 1912, Dr. McGuigan and Dr. William Williams Keen were the guests of honor at a dinner given by the medical profession of Philadelphia on the occasion of the fiftieth anniversary of their graduation in medicine.

Clayton L. Ransom, M.D. Willamette University, Salem, Ore., 1903; of Mill City, Ore.; a Fellow of the American Medical Association; who disappeared while hunting in the Jackson Hole country, Wyo., September 17, was found dead near his camping place, October 21, his death having been due to a gunshot wound supposed to have been accidentally self-inflicted while climbing over a log.

Eugene Shamon McCain, M.D. University of Texas, Galveston, 1903; aged 37; a Fellow of the American Medical Association and quarantine officer at Brownsville; formerly health officer at Tampico, Mexico; was shot and killed by Mexican bandits who held up and robbed a passenger train of the St. Louis, Brownsville and Mexico Railroad, about October 18.

Harvey R. McClellan, M.D. Starling Medical College, Columbus, Ohio, 1854; aged 88; a charter member of the Greene County Medical Association; for sixty years a practitioner of Xenia, Ohio; contract surgeon in the Army during the Civil War; founder of the McClellan Hospital, Xenia; died at his home in that city, October 17, from pneumonia.

Richard H. McBaine, M.D. College of Physicians and Surgeons in the City of New York, 1907; aged 32; a Fellow of the American Medical Association; a specialist on physical diagnosis; physician to outpatients in and a member of the faculty of Washington University, St. Louis; died in Barnes Hospital in that city, October 17, from septicemia.

Frederick Gillett Byles, M.D. Jefferson Medical College, 1882; aged 62; professor of hygiene and sanitation in the University of Colorado, School of Medicine, Denver; obstetrician to the Colorado Cottage Home and a member of the staff of the Denver City and County Hospital; died at his home in Denver, October 21, from arteriosclerosis.

William H. Pruner, M.D. College of Physicians and Surgeons, Baltimore, 1884; aged 60; a Fellow of the American Medical Association and for the last twenty-five years a practitioner of Washington County, Neb.; died at his home in Kennard, Neb., October 19, from prostatic abscess complicated with multiple abscesses of the kidney.

Joseph R. Huntt, M.D. College of Physicians and Surgeons, Baltimore, 1888; aged 50; mayor of Laurel, Md., for one term; formerly health officer; local surgeon of the Baltimore and Ohio Railroad and director of the Citizens' National Bank; died at his home in Laurel, October 18, from cerebral hemorrhage.

William George Kimball, M.D. Dartmouth Medical School, Hanover, N. H., 1876; aged 68; a member of the Massachusetts Medical Society; medical examiner for Hampshire County and representative in the Massachusetts Legislature in 1895 and 1896; died at his home in Huntington, October 20.

Mark H. O'Daniel, M.D. Atlanta (Ga.) Medical College, 1881; aged 53; formerly local surgeon at Jeffersonville, Ga., for the Southern Railway; for several years a member of the staff of the State Sanitarium, Milledgeville; died in Williams' Private Sanitarium, Macon, Ga., October 14.

Henry P. Mowry, M.D. Hahnemann Medical College, Chicago, 1877; aged 61; ex-president of the village of Bronson; formerly a member of the State Board of Charities and Correction; died at his home October 6, from angina pectoris.

Peter S. Leisenring, M.D. Pennsylvania Medical College, Philadelphia, 1852; aged 86; formerly professor of obstetrics in Omaha Medical College; secretary of the board of health and city physician of Omaha; formerly president of the San Diego (Calif.) Medical Society; died at his home in San Diego, October 15.

Mark Richards Crain, M.D. University of Vermont, Burlington, 1879; aged 59; a Fellow of the American Medical Association and a well-known surgeon of Rutland, Vt.; died in his office in Rutland, October 14, from the effects of morphin, self-administered, it is believed, with suicidal intent, while despondent.

Raymond Russ, M.D. University of California, San Francisco, 1900; aged 42; a Fellow of the American Medical Association; instructor in surgery in the University of California; formerly of San Francisco and San Mateo, Calif.; died at his home in Hillsborough, Calif., October 24, from tuberculosis.

Guerney Abner Gregory, M.D. Maryland Medical College, Baltimore, 1909; aged 35; of Stroudsburg, Pa.; formerly a member of the Medical Society of the State of Pennsylvania; died October 14, from acute gastritis, in the North Water Gap Sanitarium, Stroudsburg, where he was attending a patient.

William Patrick George, M.D. Washington University, St. Louis, 1875; aged 68; a member of the Arkansas Medical Society; a Confederate veteran; since 1869 a practitioner and druggist and president of the First National Bank of Berryville, Ark.; died at his home about October 13.

Alexander Perry, M.D. Vanderbilt University, Nashville, Tenn., 1905; aged 34; a Fellow of the American Medical Association; who began practice in Nashville and later was obliged to go to Denver and finally to Los Angeles in search of health; died in the latter city, October 20.

Joseph Jerome Noll, M.D. College of Physicians and Surgeons in the City of New York, 1885; aged 51; a member of the Medical Society of the State of New York; assistant physician to the New York Dispensary; died in his home in New York, October 17, from heart disease.

Samuel C. Rusmisell, M.D. Medical College of Ohio, Cincinnati, 1876; formerly a Fellow of the American Medical Association; of Buckhannon, W. Va.; president of the People's Bank of West Virginia, Buckhannon; died at his home about October 18.

Anthony J. Maslowsky, M.D. Kentucky School of Medicine, Louisville, 1907; of Mariah Hill, Ind.; formerly coroner of Spencer County, Ind.; died October 22, from injuries received in the overturning of his automobile near Rockport, Ind., the week before.

James Rankin Vincent, M.D. Medical College of Ohio, Cincinnati, 1884; aged 60; a Fellow of the American Medical Association; for many years a practitioner of Wilkinsburg and East Liberty, Pittsburgh; died at his home in East Liberty, October 23.

Frank Duane LeValley, M.D. University of Michigan, Ann Arbor, 1883; aged 58; a member of the Michigan State Medical Society and a practitioner of Vassar, Mich., since 1890; died at his home October 14, from heart disease.

John T. Hampton, M.D. Jefferson Medical College, 1879; aged about 70; a retired practitioner of Philadelphia; was found dead in his berth in a sleeping car on an Atlantic Coast Line train near Florence, S. C., October 9.

George M. Hite, M.D. Eclectic Medical Institute, Cincinnati, 1886; aged 56; of Nashville, Tenn.; also a clergyman of the Primitive Baptist Church; died in an infirmary in that city, October 21, after a surgical operation.

George W. Long, M.D. University of Pennsylvania, Philadelphia, 1874; aged 67; of Graham, N. C.; a member of the Medical Society of the State of North Carolina; died in a hospital in Statesville, N. C., October 16.

Thomas Henry Whalen, M.D. Illinois Medical College, Chicago, 1898; aged 57; who had charge of the smallpox epidemic in Tippecanoe County, Ind., in 1902; died at his home in Lafayette, Ind., October 19.

Patrick Wallace Cremin, M.D. College of Physicians and Surgeons in the City of New York, 1866; aged 74; a member of the Medical Society of the State of New York; died at his home in New York City, October 17.

Eugene Larrie Tupper, M.D. University of Minnesota, Minneapolis, 1897; aged 42; died at his home in Lima, Ohio, October 21, from organic heart disease.

Frank Butler Adams (license, Connecticut, 1893), aged 57; an eclectic practitioner of Hartford, Conn., for thirty-two years; died in St. Francis' Hospital in that city, September 23, from carcinoma of the throat.

John Clark Gauntlett, M.D. University of Michigan, Ann Arbor, 1887; aged 51; a resident of Elk Rapids, Mich., for more than twenty years; died at his home in that place, October 19, from heart disease.

George Corson Burnley, M.D. Hahnemann Medical College, Philadelphia, 1890; aged 49; a specialist on diseases of the eye; died at his home in Lock Haven, Pa., October 15, from angina pectoris.

Albert Schaffer Erney, M.D. Jefferson Medical College, 1877; aged 61; a practitioner and druggist of Philadelphia; died at the home of his son in that city, October 12, from cerebral thrombosis.

Michael J. Kenney, M.D. Marquette University, Milwaukee, Wis., 1911; aged 39; formerly a member of the State Medical Society of Wisconsin; died at his home in Manawa, Wis., October 22.

George A. Heintzelman (license, Philadelphia County, Pa., 1886), aged 81; for thirty years a practitioner and druggist of northwest Philadelphia; died at the home of his son in that city, October 19.

Adolphe Joseph Delcourt, M.D. University of Liege, Belgium, 1875; aged 68; formerly a Fellow of the American Medical Association; died at his home in Houma, La., October 16.

Charles Lee Caven, M.D. University of Southern California, Los Angeles, 1896; aged 43; a Fellow of the American Medical Association; died at his home in San Diego, Calif., October 18.

Matthew H. Sheldon, M.D. Eclectic Medical Institute, Cincinnati, 1876; aged 62; of Mt. Erie, Ill.; died in the Olney (Ill.) Sanitarium, September 17, from nephritis.

James K. Reader (license, Oregon, 1890), aged 69; a homeopathic practitioner of Ashland, Ore.; a veteran of the Civil War; died in Santa Rosa, Calif., October 11.

Amzi Jones, M.D. Vanderbilt University, Nashville, Tenn., 1900; aged 42; for fifteen years a practitioner of New York City; died at Saranac Lake, N. Y., October 22.

Clarence Ormsbee, M.D. New York University, New York City, 1865; aged 76; of Newburgh, N. Y.; died in Sadlier's Hospital, Poughkeepsie, N. Y., October 13.

Brooks A. Colomb, M.D. Tulane University, New Orleans, 1885; aged 53; president of St. James Parish, La.; died at his home in Colomb, La., September 20.

Joel F. Scott, M.D. Jefferson Medical College, 1883; aged 62; a Fellow of the American Medical Association; died at his home in Wilson, Pa., October 19.

Emil Haass (years of practice, Illinois, 1878), aged 88; for sixty years a practitioner of Will County, Ill.; died at his home in Frankfort, Ill., October 13.

James Henry Woodul, M.D. Kansas City (Mo.) Medical College, 1881; aged 80; died at his home in Whiting, Kan., September 12, from senile debility.

William J. Hicks, M.D. Medical College of Georgia, Augusta, 1889; aged 63; died at his home in Moultrie, Ga., August 5, from amebic dysentery.

Noah Woodrow Patton, M.D. Jefferson Medical College, 1884; aged 59; died at his home in Charleroi, Pa., October 14, from cerebral hemorrhage.

Samuel Chase Thayer, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1881; aged 54; died at his home in Boston, October 11.

Sidney H. Minor, M.D. University of Tennessee, Nashville, 1893; aged 46; died at his summer home near Hendersonville, Tenn., October 15.

John A. Long, M.D. Baltimore Medical College, 1893; aged 45; died at his home in Bowmansville, Pa., October 8, from heart disease.

Hardin Welch Bright, M.D. Bellevue Hospital Medical College, 1886; aged 53; died at his home in Richmond, Ky., about October 21.

Cyrus L. Harnden, M.D. University of Wooster, Cleveland, 1875; aged 65; died at his home in Clyde, Ohio, October 19.

Powhatan Bledsoe, M.D. University of Maryland, Baltimore, 1860; aged 87; died at his home in Wildwood, Va., June 24.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

ARTICLES REFUSED RECOGNITION

Report of the Council on Pharmacy and Chemistry

Below appear abstracts of the Council's actions on articles refused recognition which were not deemed of sufficient importance to require lengthy reports:

Swan's Rheumatic Bacterin (Mixed) No. 47

According to the statement of the manufacturers (Swan-Myers Company, Indianapolis, Ind.), Swan's Rheumatic Bacterin (Mixed) No. 47 contains in each c.c., pneumococci 25,000,000, Friedländer's bacilli 25,000,000 and streptococci polyvalent 450,000,000.

The Council's Committee on Serums and Vaccines held that there is no satisfactory evidence that either the pneumococcus or Friedländer's bacillus is concerned in the etiology of acute and chronic rheumatism or rheumatoid arthritis, and no conclusive evidence that the streptococcus is an etiologic factor. In view of this the committee held this mixed vaccine unscientific in composition, and hence barred from admission to New and Nonofficial Remedies by Rule 10.

The Council adopted the report of the committee and, the report having been sent to the manufacturer and the manufacturer's reply considered, authorized its publication.

Elixir Iodo-Bromide of Calcium Comp. "Without Mercury" and "With Mercury"

The Tilden Company, New Lebanon, N. Y., and St. Louis, Mo., sells "Elixir Iodo-Bromide of Calcium Comp. without Mercury" and "Elixir Iodo-Bromide of Calcium Comp. with Mercury." The latter is said to contain, in addition to the ingredients of the former, 1/100 grain mercuric chlorid in each fluidram. According to the label the formula of the elixir "without mercury" is :

"*Formula*—Salts of Iodine, Bromine, Potassium, Sodium, Calcium, Magnesium with Stillingia, Sarsaparilla, Rumex, Dulcamara, Lappa, Taraxacum, Menispermum."

A recent circular declares that the elixir contains:

". . . a number of the most powerful alteratives of the pharmacopeia such as chemically pure iodin, magnesium, potassium with sarsaparilla, stillingia, prickly ash, burdock, taraxacum, etc. . . . Each fluidounce contains seventy-two grains of the combined salts."

The same circular also alleges that each dram of the preparation contains:

". . . the equivalent of one and one-half grains of the combined iodids, potassium and calcium . . ."

It will be observed that, (1) the two statements quoted from the circular make no reference to bromids; (2) the statement that each dram contains "the equivalent" of 1½ grains of the combined iodids, potassium and calcium, accounts for but 12 of the 72 grains of "the combined salts" per fluidounce declared in the preceding quotation; (3) the circular mentions the presence of a drug—prickly ash—not declared on the label and, finally (4) none of the "formulas" gives the quantities of all of the several constituents.

It is evident from these "formulas" that the Tilden Company continues its policy of concealment and mystification as exemplified in the cases of Hydrocyanate of Iron, Tilden (discussed in THE JOURNAL, June 19, 1909, p. 2008), Febrisol (THE JOURNAL, June 29, 1912, p. 2043) and Respirazone (THE JOURNAL, June 14, 1913, p. 1899).

In the circular just quoted ("The Conquest of Syphilis"), all hope for the syphilitic is declared to rest in mercury and iodin, and it is implied that only through Elixir Iodo-Bromide of Calcium Comp. is it possible to obtain the greatest good from these drugs.

"Were the cleansing influences of these two drugs [mercury and iodin] unavailable to the luetic patient, he, truly, would be as pitiable an object as the leper . . .

"Modern Pharmacy has devised no better means of utilizing these anti-syphilitics than Elixir Iodo-Bromide of Calcium Comp. (Tilden) with or without mercury. . . . the Elixir, in proper dosage, acts in specific fashion and is adapted for use in all stages of the disease.

"In the early months . . . Elixir Iodo-Bromide of Calcium Comp. (Tilden) with mercury is a trustworthy weapon and the physician need have no fear but that it will subjugate the disease . . .

"When . . . the virulent stage is passed . . . Elixir Iodo-Bromide of Calcium Comp. (Tilden) without mercury may be given the patient with every assurance that medicine's most aggressive measures are being resorted to . . . From time to time, up to the very end of the time honored three years' period of treatment, it is well to put the patient back on the bichloride, using for this purpose the form of the Elixir administered in the first stages of the disease . . .

"This regime . . . will indubitably antidote the virus of syphilis and eradicate from the organism its every vestige."

While it seems incredible that any physician would jeopardize the health—even the life—of a patient by accepting this boastful magniloquence as sound therapeutic advice, still the fact that certain medical journals lend their advertising pages to advertisements for Tilden's Elixir with the caption "The Conquest of Syphilis" makes it incumbent on the Council to record its condemnation of the employment of this unscientific, semisecret mixture.

It is recommended that Elixir Iodo-Bromide of Calcium Comp. "without mercury" and "with mercury" be held in conflict with Rule 1 (secrecy of composition), Rule 6 (unwarranted therapeutic claims) and Rule 10 (unscientific composition).

THE HOROWITZ-BEEBE AUTOLYSIN TREATMENT

Some Bids and Estimates for the Treatment of Cancer

Immediately after the publication, in a popular magazine, of the first articles on the autolysin treatment of cancer, inquiries were received from various parts of the country in regard to this treatment and its value. Cancer sufferers were invited in the magazine article to write to the Autolysin Laboratory for advice regarding the treatment. Naturally many responded. There were strong evidences from the beginning of a commercial spirit in the exploitation of the treatment. We quote below some of the evidence. The first is a series of telegrams that passed between a Seattle physician and Dr. Beebe:

Dr. S. P. Beebe, New York, N. Y.

SEATTLE, WASH., JULY 7, 1915.

Kindly wire me collect at once particulars of autolysin treatment for cancer. Would it be possible for you to send me some autolysin with directions for using same for the treatment of an inoperable cancer of the uterus which involves the rectum and bladder.

DR _____ NEW YORK N Y JULY 8 1915

SEATTLE WASH

WIRE RECEIVED AUTOLYSIN NOT GIVEN OUT FOR GENERAL USE BY PROFESSION REASON UNACQUAINTED WITH THERAPEUTIC EFFECT AND PHYSIOLOGICAL ACTION EITHER NECESSARY TO BRING PATIENT HERE FOR TREATMENT OR HAVE MEMBER OF STAFF IN CONSULTATION CONSULTATION FEE HERE TWO HUNDRED FIFTY DOLLARS CONSULTATION FEE IN SEATTLE TWO THOUSAND DOLLARS A MEMBER OF OUR STAFF WILL BE IN CONSULTATION WITH DR W COLFAX MATTHEWS AT BUTTE MONT JULY FOURTEENTH YOU CAN ARRANGE THROUGH HIM FOR A CONSULTATION AT THAT TIME FOR FIVE HUNDRED DOLLARS

S P BEEBE MD

Dr. S. P. Beebe:

SEATTLE, WASH., JULY 8, 1915.

Will Doctor who is coming to Butte to give autolysin come on to Seattle and give treatment necessary for trial for five hundred dollars. Wire me collect.

DR _____ NEW YORK N Y JULY 9 1915

SEATTLE WASH

WIRE REC'D OUR STAFF MEMBER DOCTOR WILLIAM E FITCH WILL BE IN BUTTE ON THE DAY AND DATE AND AT ADDRESS GIVEN IN DAY LETTER OF EIGHTH AND WILL COME ON TO SEATTLE FOR FIVE HUNDRED DOLLARS AND TRAVELING EXPENSES FROM BUTTE TRUST YOU CAN HAVE MORE THAN ONE CASE FOR TREATMENT

S P BEEBE MD

A physician in Detroit wrote to Dr. W. H. Axford of Bayonne, N. J., whose name was mentioned in one of the popular articles as having used the treatment, asking for information regarding it. The following was the reply:

NEW YORK CITY, June 30, 1915.

My dear Doctor:—Your letter addressed to Dr. Axford, c/o The Polyclinic Hospital has been referred here for attention, and we note therefrom that you have a patient suffering from cancer of the liver and you desire information pertaining to this treatment concerning which we beg to submit the following:

For more than two years "Autolysin" has been subjected to the severest possible test in that only inoperable and hopelessly incurable cases were accepted for treatment, many of whom came with the verdict of the family physician hanging over them of having only two or three months lease of life. These patients have taken the treatment and the results on the whole have been satisfactory, in many instances, the improvement was so gratifying to the patients that they left the institution claiming they were fully recovered. We, however, are not so optimistic, but we feel that we can conservatively say that in many instances there were evidences of complete clinical recoveries.

At the present time "Autolysin" is not available for general use by the profession for the reason that they are unacquainted with its therapeutic effect and physiological action which is necessary for its intelligent administration. Before we consider it a safe remedy, a physician must first be personally instructed in the technic of its administration as well as have pointed out to him just what reactions are liable to follow—which govern future dosage—and have explained to him just the way to handle and take care of these reactions when they occur.

If your patient is able to be brought to New York for treatment, the fee for examination, consultation, etc., will be $250, and the after-treatments at the rate of from $25 to $35 per week. If this patient is unable to stand the trip then it will be necessary for a member of our staff to see her in consultation with you. The fee for this trip and consultation will be $1000 and traveling expenses.

Trusting this information will serve your purpose, and that we may have an opportunity of giving your patient the benefits of this treatment, we beg to remain

W. E. FITCH.

Shortly after the publication of our editorial on this treatment, the following letter, dated July 27, 1915, was received from a subscriber in St. Louis:

To the Editor:—Following the "Beebe-Horowitz" editorial in this week's number of your Journal, I am venturing to send you the enclosed copy of a communication to one of my patients.

Briefly the history of my patient is as follows: One year after an operation for gall stones, at which gall stones were found and the gall bladder left without drainage, a second operation was done for a mass that was in the scar line. This was diagnosed, clinically, as carcinoma of the gallbladder and liver. A large mass grew on the abdominal wall and the patient suffered many hemorrhages that had almost caused his death a number of times before controlled.

He was brought to my office on a stretcher and the massive dose X-ray, Coolidge tube, was administered through several ports of entry.

The first treatment controlled the bleeding and the mass wholly disappeared from the wall. There was also a great diminution of the liver dulness. He gained much in weight and has returned to his work.

Following his reading of the article in *Hearst's Magazine*, he wrote to Dr. Horowitz and got the enclosed reply—not, however, until after he had departed for New York, so great was his hurry to avail himself of the treatment.

He did not get farther than the "Financial Secretary" and came home for further X-ray treatment.

The following is the letter referred to. The second and third paragraphs, which are omitted, are the same as those in the letter already quoted. The fees, however, differ.

Dear Sir:—Your letter of the 19th instant, addressed to Dr. Horowitz has been received and carefully noted. We observe therefrom that you are suffering from a carcinoma of the gall bladder, and we believe from the report which you have very kindly given us that you should lose no time in availing yourself of the advantages offered from the administration of "Autolysin" in malignant disease such as you have.

. . . . . .

We note from your letter that you can come on to New York now in the next few days, and we should be very glad to welcome you and offer you the advantages of this new method of treatment. The examination with reports of the various laboratories and consultation will be $500. The treatment at $50 per week thereafter.

Trusting this information will serve your purpose and that we may have an opportunity of giving you the advantage of this treatment, we beg to remain,

Yours very truly, (Signed) ALEXANDER HOROWITZ, M.D.
Per: W. E. F. [W. E. FITCH (?)—ED.]

The following letter appeared in *Northwest Medicine* for September, and was said to have been written to a physician in Seattle. We again omit the second and third paragraphs, as they are the same as those already quoted. It seems that these two paragraphs are utilized in many of the letters, no matter who signs them:

NEW YORK CITY, July 29, 1915.

Dear Doctor:—Your letter of the 24th inst. duly received. We note from it that you have a patient under observation who is suffering from an inoperable malignant disease of the uterus. We believe we can conservatively say to you that "autolysin" at the present time offers the only hope for patients of this deplorable condition.

. . . . . .

If your patient is able to stand the trip to New York, we should be very glad to receive her for treatment and to have you accompany her, in order that we might have the patient under our personal observation and at the same time show you every courtesy in the case by personally instructing you into the technic of the administration of "autolysin." The fee for examination, consultation, etc., here would be $250. If the patient cannot stand the trip to New York and is able to pay for a consultation in Seattle, we could arrange to send a member of our staff there to see her in consultation with you, which consultation would be $250 and traveling expenses and the allowance of $200 per day for the time consumed in a trip from here to Seattle and return.

Trusting this information will serve your purpose, we beg to remain,

Yours very truly,

S. P. BEEBE, M.D.

The following correspondence indicates that a change in method of exploitation—this time through the physician—was adopted. The first letter was addressed to THE JOURNAL, and is from a physician. The Samuel M. Noyes who is mentioned is, according to a letter-head, an attorney-at-law of Wheeling, W. Va. Noyes is now, according to an autolysin circular, the "distributor."

ELLSWORTH, IOWA, Sept. 20, 1915.

To the Editor:—In the recent numbers of *Hearst's* there have appeared articles on Autolysin, used in the treatment of carcinoma. Afflicted persons are directed to write to S. M. Noyes, New York, who would put the sufferer in touch with the remedy. I wrote as a layman requesting information and received the enclosed booklet and letter.

September 17, 1915.

Dear Sir:—Replying to your letter with reference to the Autolysin treatment of cancer.

I enclose a leaflet intended for the medical profession only, that tells something of the methods and results of the new treatment. I suggest that you hand this to a local physician in whom you have confidence, and ask him to read it. If after doing so he feels that this remedy might be of value in the case to which you have reference, let him communicate with me directly and arrangements can be made to secure a supply of Autolysin. The remedy is distributed solely through legally qualified medical practitioners.

Awaiting your further communications, I am,

Yours very sincerely,

S. M. NOYES.

To a physician in Virginia Mr. Noyes wrote:

September 8, 1915.

My dear Doctor:—Replying to yours of August 29, beg to advise that in all cases it is better that the physician administering Autolysin should, if possible, attend Dr. Beebe's clinic at 25 East 70th St., New York City, but where this is impossible I will send same direct with full instructions as to its use.

The regular price being Twenty-four Dollars ($24.00) per dozen 2 c.c. Ampules and special rates made to patients who are unable to pay this price.

In the future please address me at 17 East 38th St., New York City.

Yours very truly,

S. M. NOYES.

On the other hand, patients seem to have been directly favored. Another physician writes to THE JOURNAL:

Sept. 22, 1915.

"One of my patients handed me a draft of $24.00 for 12 ampoules of the Horowitz-Beebe cancer cure. He had written to them personally and received a reply stating their price.

The foregoing are samples of the correspondence that has been forwarded to THE JOURNAL. It presumably represents the methods of promoting this unproved, secret and possibly dangerous, treatment.

VARLEX COMPOUND

An Alleged Cure for the Liquor and Tobacco Habits

"Varlex Compound," put on the market by the Varlex Manufacturing Company, Kansas City, Mo., is one of those heartless frauds sold under the claim that it can be given secretly to "cure" the liquor and tobacco habits. The term "heartless" is used advisedly. There is no preparation that can be given secretly to cure alcoholism; wives and children of inebriates reading lying advertisements of the Varlex type purchase the worthless nostrums, often with money

that can be ill afforded, in the hope of releasing father or husband from the thraldom of alcoholism. The sordid wretches engaged in the business of selling these alleged cures know full well that there is not one chance in a thousand that the return of the money spent will be demanded; for, in the nature of the case, the victims are unwilling to risk the publicity that such a demand would bring.

Varlex Compound is advertised by the "prescription fakes" method. Under the heading "Home Recipe for the Liquor Habit" the claim is made that a "well-known physician located in the Middle West, who has treated thousands of cases of the liquor habit" gives the following "simple inexpensive prescription that can be given secretly in coffee, milk, water or in the food." The alleged prescription is:

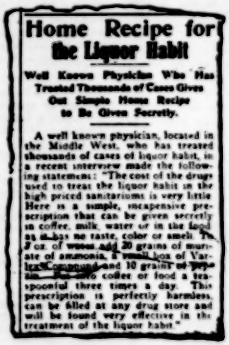
Water	3 oz.
Muriate of Ammonia	20 grains
Varlex Compound	1 pkg.
Pepsin	10 grains

A package of "Varlex Compound" was submitted to our Chemical Laboratory. Here is what the chemist reported:

CHEMIST'S REPORT

One package of "Varlex Compound for Making A Treatment For The Liquor And Tobacco Habit," prepared by Varlex Mfg. Co., Kansas City, Mo., was submitted to the Chemical Laboratory for examination. The package contained about 48 grains of a brownish-white powder, having a slightly sweet taste. Qualitative tests demonstrated the presence of milk sugar (lactose). Alkaloids and metallic substances were not found. Quantitative determinations indicated that the powder consisted of approximately 97 per cent. lactose and 3 per cent. moisture. In other words, it appears to be essentially milk-sugar.

The swindler who sells fake mining stock to widows and the hold-up man who makes women and girls his victims, rank higher, morally and ethically, than those who would sell worthless nostrums to unfortunate women who grasp, despairingly, at the promise that with the aid of these mixtures they can free their loved ones from the slavery of drink. Kansas City, Mo., is the home of more than one vicious and cruel medical fraud but none is more conscienceless than that exploited by the Varlex Manufacturing Company.



Home Recipe for the Liquor Habit

Well Known Physician Who Has Treated Thousands of Cases Gives Out Simple Home Recipe to Be Given Secretly.

A well known physician, located in the Middle West, who has treated thousands of cases of liquor habit, in a recent interview made the following statement: "The cost of the drugs used to treat the liquor habit in the high priced sanitariums is very little. Here is a simple, inexpensive prescription that can be given secretly in coffee, milk, water or in the food as it has no taste, color or smell. To 3 oz. of water add 20 grains of muriate of ammonia, 1 small box of Varlex Compound and 10 grains of pepsin. Put into coffee or food a teaspoonful three times a day. This prescription is perfectly harmless, can be filled at any drug store and will be found very effective in the treatment of the liquor habit."

A typical advertisement of the Varlex fraud.

Correspondence

Experiences with the Sodium Citrate Method of Indirect Transfusion of Blood (Lewisohn)

To the Editor:—In a recent article on this subject by Dr. Irving Simons (THE JOURNAL, Oct. 16, 1915, p. 1339) occur some curious errors, which ought to be corrected lest they lead the profession not to estimate properly a method of transfusion which may turn out to be of great value. To those who have experience with transfusions it is evident that the accidents which occurred in two of Simons' series of three cases were not due to the use of citrate, as that author thinks, but to hemolysis or agglutination (or most probably both)—that is, to incompatibility between the blood of donor and that of patient. I know for a certainty, as a result of an experience now extending over more than 350 transfusions, that hemoglobinuria such as occurred in Simons' first case never occurs unless one of the bloods mixed is actively hemolytic toward the other. This is true irrespective of whether the transfusion is by anastomosis, syringe or citrate method. (Since publication of the recent article by Dr. Libman and myself [*Am. Jour. Med. Sc.*, 1915, cl, 36], I have performed the preliminary blood tests for twenty-five citrate transfusions in which no such accidents occurred.)

Simons states, indeed, that such a test was done before his first transfusion; but since he does not describe the technic of either test or transfusion (indeed, they were both performed by another man before Simons saw the case), and since a correct technic and interpretation of these tests require considerable laboratory experience, not too much reliance should be placed on this.

In fact, it is hard to see why Simons cites this case at all as against the citrate method since he says in his conclusion: "There is no reason to believe that hemoglobinuria may not occur with either type of transfusion [that is, direct or citrate] with equal frequency. . . . Infarction occasionally occurs (lung, kidney) and . . . hemoglobinuria is quite common and can occur even when the tests in vitro are negative." To this last statement I can only reply that hemoglobinuria and infarction are exceedingly rare and never occur when the tests in vitro (properly performed) are negative and the technic of the transfusion is correct.

In the description of Simons' other cases there is no mention of any tests at all. It is important to notice that in the second of Simons' unhappy accidents the transfusion was the second one which the patient had undergone and was done eleven days after the first, and from the same donor—the patient's son. Now it has been shown experimentally (Ottenberg, Kaliski and Friedman) that it is possible to develop isohemolysins by direct transfusion from an animal of the same species. And the time requisite for the development of these antibodies is probably the same as for the development of other antibodies, namely, from four to ten days. Corresponding with this is the striking fact that if one goes through the literature of fatal accidents after transfusion, one finds a disproportionately large number of these patients to have had second transfusions five days or more after the first and with no preliminary blood tests. I have seen one such case myself (described in the recent article with Dr. Libman). Simons' article adds another to the literature. In fact, it may be set down as an axiom that to subject a patient to a second transfusion without painstaking preliminary blood tests is to court danger. It need hardly be explained again, after all that has been written on the subject, that the mere fact that the donor is a near blood relative does not obviate the necessity for the preliminary blood test.

Instructive, therefore, as Simons' cases turn out to be, they add nothing to the question of the value of the citrate method in transfusion.

REUBEN OTTENBERG, M.D., New York.

To the Editor:—The results obtained by Dr. Simons with the citrate method of blood transfusion differ not only from my own but from the general experience of others. The citrate method, one of the latest of the innumerable transfusion methods, would not have acquired such great popularity in so short a time if the method had not given good results. My material comprises nearly fifty cases, and I have never had any untoward results with this method. Lately I have used the citrate method quite extensively in children (the youngest child being 20 days old), and though I have in some cases injected large quantities (for instance 350 c.c. to a child 3 years of age), I have never observed any toxic symptoms.

The records of Simons, as published in THE JOURNAL (Oct. 16, 1915, p. 1339), seem incomplete. It is obvious that his tests for hemolysis and agglutination are partly responsible for his results. We all know that the success of a blood transfusion depends largely on a careful execution of

these tests. He does not tell us how he used the method, whether he used the proper proportion of citrate and blood, whether he had a free flow of blood from the donor's vein into the glass jar, etc.

I fail to understand why Simons was not satisfied with the result of the citrate method in his second case. He gave 500 c.c. of citrated blood, and the hemoglobin rose from 38 to 58 per cent., and had reached 75 per cent. on the following day. A reaction occurred, there being a temperature of 102, but a rise of temperature is apt to occur in a certain percentage of cases no matter what method is used (vessel anastomosis, syringe method, etc.).

The records of the first case are so incomplete that it is hardly possible to form any definite conclusion as to its clinical aspect. The patient was suffering from intestinal hemorrhages. An exploratory laparotomy was performed, but the cause of the hemorrhages was not ascertained. The patient had received a citrate transfusion and a Crile transfusion before the operation. He died a few hours after the operation; no postmortem examination was made.

Simons advocates the Crile method for blood transfusion. However, it is not clear how he would apply the vessel anastomosis in a case of acute hemorrhage. He states that he spent four hours on a Crile transfusion, and the patient would have been dead long before he succeeded in uniting the vessels. It is just in the cases of profuse hemorrhages, where the patient is pulseless from acute loss of blood and where minutes count, that the citrate method is the method of choice, as it can be performed in ten minutes.

We are indebted to Crile for having revived blood transfusion. His method, however, is practically never used now, because it has been proved that the same results can be obtained in a much more simple way by the syringe or citrate method. Any method which does not accurately indicate the amount of blood transfused cannot be considered a safe method.

I think we can definitely say that the vessel anastomosis will become more and more of historical interest.

In an editorial article on blood transfusion which appeared in the same issue (October 16, p. 1368), you state that "it would seem probable that eventually through the discovery of harmless anticoagulating methods, transfusion will become a simple procedure." The citrate method represents this desideratum.

RICHARD LEWISOHN, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TOXIC EFFECTS OF BARIUM

To the Editor:—1. I have been approached by a friend for information about the toxic effects of barium compounds on the human system. 2. He is to have charge of a large barium plant and wishes to be posted on any possible trouble that the workmen may experience in handling this material. I have been unable to find any reliable data on this subject.

H. R. MUTCHLER, M.D., Greystone Park, N. J.

ANSWER.—1. Barium acts as a powerful direct stimulant to all forms of muscle. It produces a slowing of the heart, a strong vasoconstrictor action with a consequent rise of blood pressure, and, when taken in large doses, paralysis of the cardiac muscle. It stimulates and later paralyzes the central nervous system. It is a peristaltic stimulant and a local irritant. The symptoms following the ingestion of large doses include vomiting, diarrhea, abdominal pain and dilatation of the pupils. Death is preceded by tonic and clonic convulsions. Fatal doses may be as low as 3 to 15 grains.

2. According to Oliver, the compounds of barium have never been studied in their relation to health. It is probably sufficient to say that special precautions should be taken to prevent the workmen being exposed to fumes arising from vats and tanks, to insist on the greatest cleanliness, to allow sufficient respirators during certain operations, and to take every precaution for insuring the removal of dust and thorough and efficient ventilation. Most of the instances of barium poisoning which are recorded have arisen through error, a large dose of barium having been taken when some other preparation similar in appearance was desired. Rambousek calls attention to cases of poisoning from sulphuretted hydrogen gas in plants devoted to the manufacture of sulphuric acid, in which process barium plays a large part. There are no instances, however, of barium poisoning in this industry.

THE COMPOSITION OF ALKALOL

To the Editor:—Please publish the formula of the nose and throat wash "Alkalol."

W. B. C., M.D., Philadelphia.

To the Editor:—I should like to know the approximate composition of a remedy known as Alkalol, which is sold by an Eastern concern without the formula being given on the wrapper or the advertisement that goes with the stuff. It is advertised as useful in inflammations of the mucosa of the nose and throat.

A. J. PAOVOST, M.D., Oshkosh, Wis.

ANSWER.—The Chemical Laboratory of the Association, having been requested to analyze a bottle of Alkalol purchased on the open market, reports as follows:

"Alkalol was found to be a clear, light brown liquid having an aromatic odor, a saline taste and an alkaline reaction toward litmus. It yielded about 2 per cent. of solids, mainly alkali, chlorid, chlorate and bicarbonate; of this 2 per cent., about one half was bicarbonate. During evaporation of the liquid, odors resembling eucalyptus, spearmint, cinnamon and vanilla were noted, the last, in view of the manufacturers' statement as to balsamic constituents, probably indicating the presence of some substance like Siam benzoin. Small quantities of salicylic and benzoic acids were found present. Alkalol thus appears to be essentially an aromatized, weakly alkaline, saline solution, containing a small amount of chlorate, probably potassium chlorate."

From this report physicians may judge for themselves how well justified are the claims that:

"Alkalol is more, infinitely more than a simple alkaline solution."

"Alkalol is an ideal agent for gargling, spraying or irrigating the postnasal, postpharyngeal spaces and tonsils."

"For enteric diseases particularly of children, Alkalol is invaluable."

"Appreciation of its peculiar physiological action will explain why and how it is of surpassing effectiveness in all conditions where there is ulceration or perforations of the drum membrane."

TINNITUS AURIUM, CHRONIC RHINITIS AND ALTITUDE

To the Editor:—1. Please inform me if there is any distinction between head noises and tinnitus aurium.

2. What effect would a high altitude have on tinnitus aurium, or head noises, or on chronic rhinitis?

H. J. F., M.D., Wisconsin.

ANSWER.—1. Tinnitus aurium and head noises are different terms to define the same condition. Occasionally a patient will state that he does not hear the tinnitus in the ear but in the head.

2. A high altitude usually has no permanent effect on tinnitus aurium. Sometimes the conditions increase and sometimes diminish on moving to high altitudes. Chronic rhinitis of an intumescent character is likely to be benefited by a high altitude, unless dust in the atmosphere causes irritation. In such cases the affection would be aggravated. Chronic rhinitis with scabbing of the nares is usually aggravated by a high altitude.

DEATH PROBABLY FROM PULMONARY EMBOLISM

To the Editor:—At her second confinement, March 1, Mrs. B., aged 30, always healthy, was delivered of twins—girls. It was a forceps delivery, but there was no apparent trouble. She made a splendid recovery, and had no elevation of temperature after the fourth day. On the night of April 15, about 11:30, after retiring and having probably been asleep for some time, she called her husband and exclaimed that she was dying. He found her gasping for breath, blue in the face, trying to vomit a quantity of blood, froth and mucus which was pouring from her mouth. She died almost immediately. I have asked a number of physicians concerning this case, but none of them seem to know anything about it.

H. D. S., Oklahoma.

ANSWER.—It is somewhat difficult, even when a case is actually before one, without a postmortem examination, to suggest the cause of death in such instances. Sudden death with similar symptoms may be due to a number of different causes. In the instance here described it seems most likely that death was due to pulmonary embolism.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Regular, Little Rock, November 9-10. Sec., Dr. T. J. Stout, Brinkley. Homeopathic, Little Rock, November 11. Sec., Dr. Scott C. Runnels, 900 Scott St., Little Rock.

CALIFORNIA: Los Angeles, December 14. Sec., Dr. Charles B. Pinkham, Room 527 Foram Bldg., Sacramento.

CONNECTICUT: Regular, New Haven, November 9-10. Sec., Dr. Charles A. Tuttle, 196 York St., New Haven. Homeopathic, New Haven, November 9. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Eclectic, November 9. Sec., Dr. T. S. Hodge, 19 Main St., Torrington.

DELAWARE: Dover and Wilmington, December 14. Sec., Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

FLORIDA: Jacksonville, December 7-8. Sec., Dr. E. W. Warren, 102 Front St., Palatka.

KENTUCKY: Louisville, December 7-9. Sec., Dr. A. T. McCormack, Bowling Green.

LOUISIANA: New Orleans, December 2-4. Sec., Dr. E. L. Leckert, 716 Macheca Bldg., New Orleans.

MAINE: Portland, November 9-10. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.

MARYLAND: Regular, Baltimore, December 14. Sec., Dr. J. McP. Scott, Hagerstown. Homeopathic, Baltimore, December 13-16. Sec., Dr. O. N. Duvall, 1817 N. Fulton Ave., Baltimore.

MASSACHUSETTS: Boston, November 9-11. Sec., Dr. Walter P. Bowers, Room 159 State House, Boston.

MISSOURI: St. Louis, December 13-15. Sec., Dr. J. A. B. Adcock, State House, Jefferson City.

NEBRASKA: Lincoln, November 10-11. Sec., Dr. H. B. Cummins, Seward.

OHIO: Columbus, December 7-9. Sec., Dr. George H. Matson, Columbus.

SOUTH CAROLINA: Columbia, November 9. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

TEXAS: Dallas, November 9-11. Sec., Dr. M. P. McElhannon, Belton.

VIRGINIA: Richmond, December 14-17. Sec., Dr. J. N. Barney, Fredericksburg.

WEST VIRGINIA: Elkins, November 9. Sec., Dr. S. L. Jepson, Charleston.

Medical Council of Canada

The third annual announcement of the Medical Council of Canada has been received. This council is at present made up of thirty-two members, three being appointed by the government, two by each province of Canada, one from each medical school of Canada, and three representing the homeopathic school of medicine. From this membership six standing committees have been appointed, these being, besides the executive committee, committees on education, finance, discipline, rules and regulations, and educational standards.

The members of the board do not act as examiners. Prior to each examination, certain examiners are appointed from the faculties of the various medical schools. For example, for the examination held at Montreal and Halifax, Oct. 12, 1915, thirty examiners were appointed, four each in surgery, medicine (including therapeutics), anatomy, physiology, obstetrics and gynecology, hygiene and state medicine, pathology and bacteriology, and two homeopaths. Thus the board has been empowered to secure as examiners those who are best qualified because of their teaching positions to conduct examinations in the various subjects.

At the examination held in October, 1914, eighty-six candidates presented themselves for examination and of these candidates, forty-nine (57 per cent.) passed, twenty-two (25.6 per cent.) were rejected, and fifteen (17.4 per cent.) required to take subsequent examinations in one or two subjects.

The total expenses of the board for the year ending March 31, 1915, were $13,576.45; whereas the income, which included $15,000 from a government grant, amounted to $36,871.62.

The fee for the examination, including subsequent registration, is $100. In case of failure requiring reexamination, the candidate is required to pay one half of the original fee, that is, $50.

Candidates for the examination of the council are required to present either (*a*) a license of a provincial medical council or board of examiners, or (*b*) a certificate from the registrar of a provincial medical council, or board, that the requirements of that council or board in regard to preliminary education, matriculation, medical curriculum and graduation have been complied with.

Candidates who hold diplomas outside of Canada are required to present certificates from the registrar of a provincial medical council, the same as is required of graduates of the Canadian universities.

Applications for examinations, together with the necessary certificates and fee, must be deposited with the registrar at least four weeks before the date set for the commencement of the examinations.

The qualification granted by the Medical Council of Canada is known as the "License of the Medical Council of Canada" (L. M. C. C.).

The subjects of the examination are physiology, anatomy, hygiene and public health, pathology and bacteriology, midwifery and gynecology, surgery and medicine (including therapeutics), six questions being assigned in each subject. The examination consists of a written examination in each subject in the English or French language, and also (*a*) a clinical and oral examination in medicine and surgery, and (*b*) an oral examination in physiology, anatomy, hygiene and public health, pathology and bacteriology, and midwifery and gynecology. Sixty per cent. is required to pass. A candidate who fails in not more than two subjects may present himself at a subsequent examination for the subjects in which he failed. Failure in more than two subjects necessitates reexamination in all subjects. Grades are not subject to revision. The next examination will be held simultaneously at Toronto and Winnipeg, June 13, 1916.

New York January Report

Mr. H. H. Horner, chief of the examination division of the New York State Board of Medical Examiners, reports the written examination held at Albany, Buffalo, New York and Syracuse, Jan. 26-28, 1915. The total number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 156, of whom 118 passed, including 2 osteopaths, and 38 failed, including 1 osteopath. Fifteen candidates were licensed through reciprocity. Thirteen candidates were granted reregistration licenses. The following colleges were represented:

College	Year Grad.	Total No. Licensed
PASSED		
Yale University	(1910)	1
Rush Medical College	(1914)	1
Johns Hopkins University	(1904) (1911, 2) (1914)	4
University of Maryland	(1912) (1914)	2
Harvard University	(1911) (1913)	2
Tufts College Medical School	(1910) (1912)	2
University of Michigan Medical School	(1914)	1
University of Michigan, Homeo. Med. School	(1912) (1914)	2
Albany Medical College	(1910) (1911) (1913, 6) (1914, 5)	13
Columbia University, College of Physicians and Surgeons	(1912) (1913, 6) (1914, 3)	10
Cornell University	(1913, 2) (1914)	3
Fordham University	(1913, 2) (1914, 3)	5
Long Island College Hosp.	(1911) (1912) (1913, 5) (1914, 8)	15
New York Homeo. Med. Coll. and Flower Hosp.	(1914)	5
New York Med. Coll. and Hosp. for Women	(1914)	2
Syracuse University	(1913, 3) (1914, 3)	6
University and Bellevue Hospital Medical College	(1913, 2) (1914, 11) (1915)	14
University of Buffalo	(1913, 2) (1914)	3
Cleveland Homeopathic Medical College	(1903)	1
Cleveland Pulte Medical College	(1913)	1
Jefferson Medical College	(1912) (1914, 2)	3
Medico-Chirurgical College of Philadelphia	(1914)	1
University of Pennsylvania	(1910, 2) (1911, 1) (1912, 2)	5
Woman's Medical College of Pennsylvania	(1914)	1
Vanderbilt University	(1903) (1906) (1912)	3
University of Virginia	(1910) (1911)	2
McGill University	(1902) (1914)	2
University of Toronto	(1895) (1909) (1911)	3
University of Jurjey	(1907)	1
University of Edinburgh	(1902) (1910)	2
FAILED		
Chicago College of Medicine and Surgery	(1912)	1
College of Physicians and Surgeons, Baltimore	(1913)	1
University of Maryland	(1911) (1914)	2
Harvard University	(1893) (1905) (1914)	3
Albany Medical College	(1914)	3
Columbia University, College of Phys. and Surgs.	(1913)	2
Fordham University	(1913)	3
Long Island College Hospital	(1910) (1911) (1912) (1914)	4
New York Homeo. Med. Coll. and Flower Hosp.	(1913, 2) (1914, 2)	4
Syracuse University	(1913)	1

University and Bellevue Hospital Medical College	(1914)	1
Eclectic Medical College, Cincinnati	(1914)	1
Ohio-Miami Medical College	(1911)	1
Jefferson Medical College	(1912)	1
Medico-Chirurgical College of Philadelphia	(1914)	1
University of Pennsylvania	(1907) (1912)	2
University of Vermont	(1903)	1
Queens University	(1911) (1913)	2
University of Naples	(1905) (1907)	2
University of Palermo	(1905)	1

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Denver and Gross College of Medicine	(1908)	Utah
Rush Medical College	(1900)	Ohio
Indiana University	(1910) (1911)	Indiana
Johns Hopkins University	(1911)	Ohio
Baltimore Medical College	(1907)	New Jersey
Harvard University	(1912)	New Jersey
Univ. of Michigan Med. School	(1880)	New Jersey; (1911) Michigan
University of Michigan, Homeo. Med. School	(1914)	Michigan
New York Homeo. Med. Coll. and Flower Hosp.	(1913)	New Jersey
University and Bellevue Hospital Medical College	(1913)	New Jersey
Jefferson Medical College	(1906)	New Jersey
University of Pennsylvania	(1911)	New Jersey
University College of Medicine, Richmond	(1911)	Virginia

Book Notices

PRACTICAL MATERIA MEDICA AND PRESCRIPTION WRITING WITH ILLUSTRATIONS. By Oscar W. Bethea, M.D., Ph.G., F.C.S., Assistant Professor of Materia Medica, Tulane University. Cloth. Price, $4 net. Pp. 549. Philadelphia: F. A. Davis Company, 1915.

The subjects are handled chiefly from the standpoint of the practicing physician. The uses of remedies are mentioned briefly, most of the discussions being devoted to the forms in which medicines may be administered, that is, their pharmacy. According to the preface, the object of the book is to give instruction to the student concerning what preparations of a remedy, for example, iron, "will best meet the demands of particular conditions, the precautions to be observed in employing them, how to correctly prescribe them, alone or in combination, and, if in combination, with what forms or preparations of the other agents; how to order for the safest, most convenient and agreeable administration; how to use the correct names, conveniently estimate the proper quantities, the best hours for administration, and the many other matters an ignorance of which may render the physician unable to properly put to practical use his knowledge of the other departments of medical science." Medical students, physicians and pharmacists should find the book useful.

PATHOLOGICAL LYING, ACCUSATION AND SWINDLING. A Study in Forensic Psychology. By William Healy, A.B., M.D., Director, Psychopathic Institute, Juvenile Court, Chicago, and Mary Tenney Healy, B. L. Criminal Science Monograph No. 1. Cloth. Price, $2.50 net. Pp. 286. Boston: Little, Brown & Co., 1915.

The authors define pathologic lying as falsification entirely disproportionate to any discernable end in view. A liar of this type is not falsifying because he is insane, feebleminded or epileptic. His lying, too, represents a trait rather than an episode. It is an easy and a short step from this form of lying to swindling, and closely akin to these traits is that of accusation of self or of others without reasonable motive. Dr. Healy has had exceptional opportunity to become acquainted with this form of abnormal mentality. He is able to give detailed histories of nineteen cases. These cases have been carefully studied, and their peculiar features clearly set forth. Particular attention is given to the consideration of the influence of heredity, environment in early life, sex, physical condition of the patient, habits, psychic contagion, etc. A few borderline cases in which the lying is due to insanity, or is at least one manifestation of it, are considered. The prognosis in the patients under Dr. Healy's observation has been better than is generally believed to be possible. A brief outline of the treatment is given, with emphasis laid on the importance of removing harmful causes and of diverting the activities into channels in which lying will be readily detected and there will be opportunity to let off mental steam in some way easily consistent with truth-telling.

Books and articles on this subject in English are rare. This is shown by the review of the literature in the second chapter. A work on this topic in the English language, therefore, was really desirable. The book is well written and scholarly. It is broad minded, showing a knowledge not only of psychology and insanity but of general medicine as well. It shows, further, that the exceptional opportunities afforded for research in the psychopathic institute connected with the juvenile court of Chicago have been well utilized. Dr. Healy's reputation as the author of the excellent work, "The Individual Delinquent," will be further enhanced by this volume, though in it he shares the honors with his wife. The book is fittingly dedicated to Judge Merritt W. Pinckney of the juvenile court, Chicago, whose character, ability and self-sacrificing public spirit render him deserving of this tribute.

THE STARVATION TREATMENT OF DIABETES, WITH A SERIES OF GRADUATED DIETS AS USED AT THE MASSACHUSETTS GENERAL HOSPITAL. By Lewis Webb Hill, M.D., and Rena S. Eckman, Dietitian. Introduction by Richard C. Cabot, M.D. Cloth. Price, $1. Pp. 72. Boston: W. M. Leonard, 1915.

Allen's method of treatment of diabetes attained popularity with a rapidity which seems to indicate its worth as an accepted method of procedure in such cases. This little monograph contains the details of the treatment. The actual technic is not difficult to master. A series of graduated diets are offered which have proved successful in the use of the treatment at the Massachusetts General Hospital. The booklet will be found of value to the physician who wishes to undertake the treatment of a case of diabetes by this method. It is to be regretted, however, that the price of the book is out of all proportion to its evident cost of production.

THE PRINCIPLES AND PRACTICE OF OBSTETRICS. By Joseph B. DeLee, A.M., M.D., Professor of Obstetrics at the Northwestern University Medical School. Second Edition. Cloth. Price, $8 net. Pp. 1087, with 938 illustrations. Philadelphia: W. B. Saunders Company, 1915.

In this edition of this excellent work, the author has thoroughly revised the text and elaborated some of the sections. Many new illustrations and plates have been added. An apology is made for those illustrations in which rubber gloves are not shown on operator's hands, because of the difficulty of neat reproduction of such pictures. The book is marked by an excellent conservatism; for instance, in his discussion of "twilight sleep" and of the value of the Abderhalden test, the author realizes that neither the radical enthusiast nor the bitter opponents of these procedures have reached the correct points of view.

SCIENTIFIC AND APPLIED PHARMACOGNOSY. Intended for the Use of Students in Pharmacy, as a Handbook for Pharmacists and as a Reference Book for Food and Drug Analysts and Pharmacologists. By Henry Kraemer, Ph.B., Ph.M., Ph.D., Professor of Botany and Pharmacognosy, Philadelphia College of Pharmacy. Cloth. Price, $5. Pp. 867, with illustrations. Philadelphia: Published by the Author, 1915.

This contains a discussion of vegetable drugs arranged according to botanic families. It also includes a consideration of a few of the more important drugs obtained from the animal kingdom, and a key for the identification of powdered drugs and foods. A large number of interesting and instructive illustrations add to the value of the work, which is well adapted for the purpose for which it is intended. The author's "Applied and Economic Botany" is intended to be used as preparatory and supplementary to the present volume.

A TEXT-BOOK OF PATHOLOGY. By Alfred Stengel, M.D., Sc.D., Professor of Medicine, University of Pennsylvania, and Herbert Fox, M.D., Director of the Pepper Laboratory of Clinical Medicine, University of Pennsylvania. Sixth Edition. Cloth. Price, $6 net. Pp. 1045, with 468 illustrations. Philadelphia: W. B. Saunders Company, 1915.

This edition represents an extensive revision of this well-known textbook on pathology and the complete rewriting of many sections. A new section on transmissible diseases has been added, as well as on the pathology of the eye, ear and skin. The chapter on technic, of previous editions, has been omitted. The chapter on diseases of the nervous system has been much shortened. Numerous new illustrations have been added.

Medicolegal

Statute Violated by Granting Degree of Doctor of Chiropractic

(Commonwealth vs. New England College of Chiropractic, Inc. (Mass.), 108 N. E. R. 895)

The Supreme Judicial Court of Massachusetts overrules the exceptions of the defendant corporation, which was convicted of granting the degree of Doctor of Chiropractic without authority and contrary to the statute. The statute referred to provides, among other things, that, whoever, without the authority of a special act of the legislature granting the power to give degrees, offers or grants degrees as a school, college or as a private individual, shall be punished. The court says that it is not to be assumed that the statute was intended to relate only to such degrees as were in use at the time it was enacted. It is comprehensive in its terms and may include whatever properly may be described as a degree at any time. "Doctor" is used commonly to indicate skill in the general subject of medicine. Doubtless one purpose of the legislature in enacting the statute was to protect the public from the imposition and suffering which might follow the indiscriminate use of a title conveying the implication of skill to treat disease by those who have pursued no adequate course of study to qualify them. "Chiropractic" is a new word. But it is held in Commonwealth vs. Zimmerman, 108 N. E. R. 893, that one practicing it may be found to be practicing medicine. "Degree," as used in this statute, is any academic rank recognized by colleges and universities having a reputable character as institutions of learning, or any form of expression composed in whole or in part of words recognized as indicative of academic rank, alone or in combination with other words, so that there is conveyed to the ordinary mind the idea of some collegiate, university or scholastic distinction. While this definition may not include all instances, it is sufficiently accurate for the present case. When a title like "Doctor," commonly associated with unusual skill acquired by academic or professional study in schools or colleges, is conferred either separately or associated with other words, the statute is violated. The conferring of a title made up of the word "Doctor" and a word relating to the healing art may be found to be the granting of a degree within the meaning of the statute. The word "Doctor" in connection with an unusual and high-sounding word would be quite as likely to impose on the ignorant and credulous as the false use of the conventional Doctor of Medicine.

Chiropractic and the Practice of Medicine

(Commonwealth vs. Zimmerman (Mass.), 108 N. E. R. 893)

The Supreme Judicial Court of Massachusetts overrules exceptions to a conviction of the defendant of practicing medicine without having been lawfully authorized. The evidence tended to show that he had kept an office, indicated by a sign on which his name was followed by the word "chiropractor," and that he practiced for pay. The court says that the treatment pursued by the defendant was to have those who resorted to him to go into an inner room and remove their outer garments until they were stripped to the waist. The patient then took a sitting position. The defendant examined down the spine, beginning at the top, by feeling with his fingers to see whether each vertebra was in its proper position. The method to discover whether a vertebra was out of position was by making a gliding move of the three middle fingers of the right hand, which constituted the process of "palpation" whereby one vertebra was compared with another. As a result of this "analysis" the defendant was able to tell whether vertebrae were out of alignment or out of their normal positions. In making "adjustments," the patient was placed on a low table with face downward and the vertebra which was out of condition was given a quick thrust or push by the hands of the defendant. Although the defendant did not prescribe medicine, and testified that he paid no attention to the patient's description of symptoms or disease, yet it was obvious that his purpose was to treat the human body in order to make natural that which he found abnormal in the narrow field of his examination. The removal of pressure on nerves is a means of relieving the ills flowing from that source.

The plaintiff's manipulation was of a most important part of the body and related to a nerve center. It might have been found that it could have no other aim than a prevention of disease or relief from existing disarrangement of body functions. That which the defendant did and its manifest purpose might have been found to be practicing medicine within the meaning of the statute. Medicine relates to the prevention, cure and alleviation of disease, the repair of injury, or treatment of abnormal or unusual states of the body and their restoration to a healthful condition. It includes a broad field. It is not confined to the administering of medicinal substances or the use of surgical or other instruments. It comprehends a knowledge not only of the functions of the various organs of the human body, but also the diseases to which these organs are subject, and the laws of health and the modes of living which tend to avert or overcome disease as well as the specific methods of treatment that are most effective in promoting cures. In order to practice medicine one need not cover the entire field of the science. If he devotes himself to a very restricted part of it, he still may be found to practice medicine. It is a matter of common knowledge that there has been great specialization in that profession in recent years.

It was of no consequence that the defendant abstained from the use of the words "diagnosis," "treatment," or "disease" in description of what he did, and employed the terms "analysis," "palpation," and "adjustment." The acts which he did and their manifest design were to be examined rather than the words used, in order to ascertain the true nature of the defendant's conduct. The circumstance that the statute exempts certain classes, such as osteopaths and pharmacists, and those practicing Christian Science, mind cure, massage and others, does not render the statute unreasonable as to the defendant nor deny to him the equal protection of the laws. One of the exemptions is of the "cosmopathic method of healing." "Cosmopathic" is defined in the Standard Dictionary as "open to the access of supernormal knowledge or emotion supposedly from a preternatural world." Without undertaking to decide what a "cosmopathic method of healing" may be, plainly it does not include the defendant's operations.

Fraud Order Upheld After the Employment of a Physician

(Hall vs. Wilcox (U. S.), 225 Fed. R. 333)

The United States Circuit Court for the Southern District of New York in denying a motion, in this old but recently reported case, for a preliminary injunction to restrain the postmaster at New York City from withholding mail from the complainant, who was selling "electric belts" which were advertised as curing or aiding many ailments and increasing and preserving the sexual powers of men, holds that the presumption was that the postmaster general was right in his conclusion on which he issued the fraud order under which the mail was withheld. Certainly the complainant, the court says, did not meet the burden of proof imposed on him by the presumption. He admitted one recent instance of business to be indefensible, and scarcely denied that such instances may have been the rule. If they were even rare, he admitted that some fraudulent quackery existed until recently. To assert that the course of business indicated by the past had been mended by the sudden employment of a licensed physician, concerning whose professional qualifications (including pecuniary independence of the complainant and the electric belt business) nothing was shown, was asking too much of credulity. The complainant's argument was based on the proposition that his misdoing must be proved to be in the present tense, to justify a fraud order. The court knows of no more persuasive evidence of present conduct than past performance.

Society Proceedings

COMING MEETINGS

Am. Assn. for Study and Prevention of Inf. Mortality, Phila., Nov. 10-12.
American Association of Anatomists, Chicago, Dec. 27-29.
American Physiological Society, Boston, Dec. 27-30.
Hawaiian Medical Society, Honolulu, Nov. 6-8.
Society of American Bacteriologists, Urbana, Ill., Dec. 28-30.
Southern Medical Association, Dallas, Tex., Nov. 8-11.
Southern Surgical and Gynecological Association, Cincinnati, Dec. 14-16.
Western Surgical Association, Des Moines, Dec. 17-18.

AMERICAN ROENTGEN RAY SOCIETY

Sixteenth Annual Meeting, held in Atlantic City, N. J., Sept. 22-25, 1915

(Continued from page 1581)

Roentgen Deep Therapy

DR. ARTHUR F. HOLDING, New York: The physical methods used with the Roentgen ray, such as radium coagulation and the ultraviolet light, gave 100 per cent. of cures in the treatment of nonmalignant cases, that is, where the disease was superficial. Seventy per cent. of deep therapy cases were improved in conjunction with surgery, and 7 per cent. of the inoperable cases were improved in about 20 per cent. of the hopeless, inoperable cases.

Radium Plus Roentgen Ray in the Treatment of Superficial Lesions

DR. RUSSELL H. BOGGS, Pittsburgh: Radium applied locally supplemented by the Roentgen rays to the adjacent tissues is the ideal form of radiation, because all the malignant cells can be rayed stronger with less injury to the healthy tissues. Surgery and radium are local methods of treatment. Metastases in distant parts of the body are beyond the reach of these methods. Radium destroys the malignant cells without injuring the normal ones, but the radium rays do not reach beyond a certain depth; hence it is evident that radium should be used only in cavities, cross-firing as much as possible before inserting the tube into the growth, and raying the adjacent lymph supply as thoroughly as possible.

DISCUSSION OF THE PAPERS OF DRS. HOLDING AND BOGGS

DR. HENRY K. PANCOAST, Philadelphia: I have been interested in radium for over a year and a half, and have treated more patients with radium than with other methods. Nevertheless, I have as much confidence in Roentgen therapy as I ever had. Radium and Roentgen rays can be combined to good advantage. There are certain conditions in which radium is superior to the Roentgen ray, such as nevi. It is useless to attempt to treat with radium unless a sufficient quantity is used. This is especially true of deep lesions, and even in the case of superficial lesions it is dangerous to treat large areas with small quantities of radium. It has been said that radium reactions are not as severe as Roentgen-ray reactions. That is not true; but radium reactions disappear more rapidly and more uniformly than Roentgen-ray reactions. It has been said that radium radiation is not manifested in a desirable way beyond an average of 2.5 cm. from the source of radiation. I believe that there is such a condition as stimulation of the growths. We may give too little radium or too little Roentgen radiation, and stimulate a malignant growth to greater activity, thus also increasing the danger of the occurrence of metastases. In inoperable carcinoma of the uterus, when radium has been used, patients with few exceptions have been markedly improved. The local lesion in the cervix has in many instances disappeared. The patient has moments of comparative con.fort, without discharge or bleeding, although after a year I have received reports of recurrences and metastases. Why? For the simple reason that the man who used the radium did not have in mind the fact that effects were not being obtained beyond 2 or 3 cm. distant from the Roentgen tube. That can be overcome by a combination of the Roentgen and radium therapy.

DR. H. W. DACHTLER, Toledo, Ohio: I do not know of any case of epithelioma that has been cured by radium. I know of two patients who were treated with radium because the Roentgen ray was not satisfactory. One of these patients is dead and the other would like to be. As to the difference in reaction between radium and Roentgen rays, that is easily explained. Radium is applied to the surface, and the intensity of the Roentgen ray is 1,000 times greater; hence radium reactions clear up more rapidly.

DR. GEORGE E. PFAHLER, Philadelphia: The keynote of success in this line of work is a combination of radium and the Roentgen ray, the former to be applied in cavities and the latter on the surface.

Oxygen in Cystoscopy and Pyelography

DR. AMEDEE GRANGER, New Orleans: For six years I have used oxygen. It is easily obtained, does not harm the tissues, and is a mild antiseptic and analgesic; it is well borne by the bladder, and permits of much greater distention in the case of painful and irritable bladder than is possible with either air or boric acid solution. It is easily retained and easily expressed. Calculi show with remarkable clearness. If the prostate is enlarged, the shadow is easily made out. The entire outline of the bladder is distinctly visualized, and if the walls are unyielding because of adhesions or infiltrations, these are easily seen. Growths, diverticuli and other deformities are easily recognized.

Pyelography

DR. W. F. MANGES, Philadelphia: Pyeloscopy is preliminary to pyelography. A big catheter and an opaque fluid should be used. No attempt is made to settle the actual condition of the injected pelvis, but only to determine the proper time to make the pyelogram. The procedure causes the patient no additional discomfort, and is a safeguard against overdistention. The operator need not have any fear of personal danger, because fluoroscopy today can be made perfectly safe.

DISCUSSION ON THE PAPERS OF DRS. GRANGER AND MANGES

DR. JOHN H. SELBY, Washington, D. C.: Oxygen is a very valuable aid in the study of the bladder. Using it in the kidney requires much distention of the pelvis and calices, as well as of the ureter, in order to get the proper differentiation. That is dangerous. Therefore, I prefer the fluid which is allowed to flow in by the gravity method. Fluids, especially thorium nitrate, are not as irritating as oxygen, and do not overdistend. If there is danger of overdistention, the patient should be put immediately into a hot sitz bath, the back scalded, if necessary, and then he should be given 1/12 grain of atropin. I have had to do that several times. This work is very dangerous unless it is done carefully. It is a feasible and workable method in experienced hands. I am glad that Dr. Manges has taken up fluoroscopy in kidney cases. Our English confrères are well satisfied with this method, and some of them believe they can locate a stone in 80 per cent. of the cases without making any roentgenograms at all. The question of ascending infection, however, must be considered in these cases. In a few cases in which a 10 to 12 per cent. thorium nitrate solution was used after the bladder was filled and the patient was then placed in the Trendelenburg position, we could see the solution travel up the ureters.

DR. A. W. CRANE, Kalamazoo, Mich.: I have distended the bladder with filtered air for the last ten or twelve years, and have never had any bad results or accidents. It is not necessary to use oxygen. The air is filtered by pushing cotton into a medicine dropper and pumping air through that into the catheter until the patient feels some distention in the bladder. It is not necessary to overdistend the bladder, because if it can be outlined, one can decide whether the stone, if present, is inside or outside of that viscus.

DR. WILLIAM H. STEWART, New York: I made some investigations of enlarged prostates by injecting air into the bladder. I was much impressed with the detail of the coccyx which this method gave. One cannot get it in any other way. Overdistention and direct trauma of the calices can be avoided by using Dr. Manges' method. These two points have caused most of our trouble, but this method is not dangerous, if used by the expert.

Treatment of Exophthalmic Goiter by Roentgen Therapy

Drs. J. D. Zulick and George E. Pfahler, Philadelphia: The trial of the treatment of goiter by Roentgen therapy with an interval of waiting of one month is justifiable in all cases, and if operation is decided on, nothing is lost, and many operations can be avoided. The treatment should be directed toward both the thyroid and the thymus. An increase in weight and a decrease in pulse rate are the first signs of improvement, and are practically always found. Treatment must not be prolonged over too long a period, or hypothyroidism may be produced. The goiter and the exophthalmos are the last to show improvement, and in many cases have shown no change at all.

Method of Preventing Unpleasant Symptoms Following Deep Roentgen Therapy

Dr. Sidney Lange, Cincinnati: Unpleasant constitutional symptoms following deep Roentgen therapy may be the result of an acidosis. As the administration of sodium bicarbonate by mouth prevents the occurrence of these symptoms, I now prescribe as a routine 30 grains of sodium bicarbonate every three hours for the first forty-eight hours after each treatment. When the condition of the patient warrants, the sodium is also given for twenty-four hours before treatment, to increase the alkalinity of the blood, and the patient is encouraged to drink freely of alkaline water. We also apply Dodd's alkaline lotion twice daily to the skin areas under treatment as a prophylactic measure against the development of a reaction. We have thus been able to increase the skin tolerance and deliver a greater dose to the underlying tissues than would otherwise be possible.

Cause and Prevention of Constitutional Symptoms Associated with Deep Roentgen Therapy

Dr. George E. Pfahler, Philadelphia: The gases produced by the action of the high tension current on the air are an important factor in the production of these symptoms. We may possibly add the ionization effects of the rays. The highly sensitive and neurotic type of patient is more liable to develop these symptoms than the more sluggish and phlegmatic patient. The rational line of treatment is to eliminate the gases and to provide fresh air. The former may be accomplished by preventing leakage of the current by careful insulation, and the latter by giving the treatment in a large, well-ventilated room, and by the instillation of a fan which will carry the gases away from the patient. To supply fresh air and oxygen directly to the patient, I use a breathing mask placed over the nose and mouth. It is made of celluloid with a rubber cap similar to the mask that is used in connection with a nitrous oxid-ether apparatus. We also divide each series of treatment, giving part of the treatment on two or three successive days.

Roentgen Therapy of Menorrhagia, Dysmenorrhea and Uterine Myomas

Dr. Sidney Lange, Cincinnati: In fifty consecutive cases a satisfactory result was obtained by Roentgen treatment, and artificial menopause, apparently permanent, was established in every case in which it was desired, regardless of the age of the patient. Malignancy has not developed in any case, either during or following treatment, nor has there been a recurrence of menstruation, although in several cases there has been an occasional faint show during the few months just following the treatment. After the lapse of a few months, however, abatement of the ovarian function has been complete and permanent. It is a most satisfactory form of treatment, as it does not harm, causes no discomfort or pain, and is good in its results.

DISCUSSION ON THE PAPERS OF DRS. LANGE, ZULICK AND PFAHLER

Dr. Frederick H. Baetjer, Baltimore: I have been very much interested in deep therapy of the thymus. In all our cases we have made examinations of the chest to see whether there was any compression of the trachea or a substernal thyroid. After operation on the thyroid a certain percentage of the patients did not get well. The question is, Does the thymus play any rôle in these cases? We cannot demonstrate the thymus roentgenographically in every case, because its edges may be as thin as tissue paper, and hence throw little or no shadow. We have often seen the edges of the gland extending out beyond the sternum. We have started to treat all thyroid cases first by raying the thymus, protecting the thyroid as much as we could. In many ways the results have been satisfactory, and in some cases they have been disappointing. We always give this treatment first, however, and if there is no improvement an operation is performed. The difficulty in treating the thyroid with the Roentgen ray is that we cannot tell how much of the gland is being destroyed, and we must remember that a certain amount of gland tissue must be preserved for function. The surgeon is better able to approximate that when the gland is exposed to view.

Dr. Rollo H. Stevens, Detroit: To prevent constitutional symptoms, I use an electric fan, blowing directly on the patient, and I give the treatment in two sittings. I treat the patient from the side, and that position, together with covering the patient's mouth with a towel, seems to help them very much.

Dr. George E. Pfahler, Philadelphia: A prominent physiologist told me that the enlargement of the thyroid stimulates the enlargement of the thymus, and vice versa, and he suggested that the exophthalmic patient may have an enlargement of the thymus as the result of shock, nervous strain, or some condition which favors enlargement of the gland, but that the enlargement of the thymus might be responsible wholly for the thyroid enlargement.

Dr. Sidney Lange, Cincinnati: I treated a woman who had a sarcoma of the upper jaw, exophthalmos and blindness in each eye, with, in addition, occlusion of the nares. Deep therapy gave splendid results, the exophthalmos disappeared, the nares opened up, and the foul odor of the discharge stopped. A patient with lymphosarcoma of the neck made a symptomatic recovery. The patient, a railroad engineer, is still at his work. There has been complete disappearance of the tumor. Another patient with mediastinal sarcoma presented marked circulatory pressure symptoms. He also has made a symptomatic recovery, being entirely free from all pressure symptoms. *(To be continued)*

DELAWARE STATE MEDICAL SOCIETY

Annual Meeting, held in Wilmington, Oct. 11-12, 1915

The President, Dr. Henry W. Briggs, Wilmington, in the Chair

Anthrax

Dr. John Palmer, Jr., Wilmington: I have in the last eight years attended over forty-two cases of anthrax affecting the cutaneous and cellular tissues. The part is thoroughly but gently washed with 1:2,000 mercuric chlorid solution, dried well, then swabbed with 10 per cent. tincture of iodin and some alkali applied. This is repeated daily for several days until the slough has come away. It takes about two or three weeks for an ulcer to heal, which it does with very little scar as compared with the tissues involved. No systemic treatment is necessary other than cleaning out the bowels, though some require strychnin and alcoholic stimulants. If the trachea becomes much involved, nothing will prevent death by suffocation. It has been my experience that if the vesicles are kept unruptured it is better for the patient. The fatal cases I have seen were those in which the vesicles had been ruptured.

DISCUSSION

Dr. Joseph P. Wales, Wilmington: It is important to let the vesicle alone. When the blood vessels and lymphatics are opened, a worse infection in the tissues around the vesicle will ensue.

Dr. Joseph W. Bastian, Wilmington: I had a slight experience with anthrax and realize that the diagnosis will mislead the majority of us if we are not on our guard. The pimple is innocent looking, and as it develops, the surrounding tissue is slightly lighter in color than the healthy tissue.

In Wilmington, where we have a great number of Morocco factories, there is much more anthrax than is found in many other parts of the country, and it is a condition which is fatal so often that it is exceedingly important in two particulars: if it is not meddled with too much, the patient is liable to recover, and, if it is meddled with, the infection is going to spread, and may possibly reach other persons.

Uterine Fibroids

DR. HENRY J. STUBBS, Wilmington: These growths are the most common of all uterine tumors, and usually develop during menstrual life. They are prone to secondary degenerations and to septic infection. The latter condition may be brought about by the improper use of the uterine sound, by an injury or by extension from neighboring structures. These tumors not infrequently undergo malignant change, and for this reason alone should be removed early. The usual symptoms are hemorrhage, pressure and traction, constipation, rectal and vesical tenesmus, and frequent urination or retention of urine. In thirty-three patients operated on I have had five deaths. One successful case had had an exploratory operation in a large hospital and had been pronounced inoperable.

DISCUSSION

DR. S. C. RUMFORD, Wilmington: In making examinations for other conditions we frequently find fibroids. The ones, aside from those that are large and produce pressure, that generally call the patient's attention to the condition and cause her to consult us are the submucous variety with hemorrhage. We should bear in mind the possibility of malignancy. All fibroids should be removed. Fibroids producing pressure of any sort should be removed because they are likely to be infected by a bruise or blow on the abdomen, or by a fall, which may interfere with the blood supply sufficiently to cause an infection. A very unfortunate condition following operation is embolism. This happened to me in two cases; the patient got up perfectly well and died suddenly.

DR. GEORGE I. MCKELWAY, Dover: Fibroids of any size should be removed. They are liable to degenerative changes. The mere fact that these changes may not be fatal does not influence the fact that they do impair the general health and sometimes the mental health.

Unusual Case of Renal Calculi

DR. JAMES A. DRAPER, Wilmington: The patient, a man of 38, stated that ever since he could remember he had been subject to attacks of severe pain in the left loin extending to the bladder, during which the left side of the abdomen would swell and only a small amount of urine would be passed. The attacks would last from a few hours to a day and terminate by the passing of a large quantity of very thick offensive urine. At 11 years of age litholapaxy was done for stone in the bladder. This gave only temporary relief. When seen a year ago he was weak, pale and emaciated with a senile appearance. A roentgenogram revealed stone of the kidney. Operation was done and several calculi found aggregating in weight 1 pound 2½ drams. The patient died of kidney failure three weeks later.

DISCUSSION

DR. WILLIAM WERTENBAKER, Wilmington: The differential diagnosis between renal calculi, cholelithiasis and appendicitis is frequently not made. At times it is impossible. I recall a case in which I made a diagnosis of either gallstones or kidney stone. During an attack the doctor called in diagnosed the condition as suppurative appendicitis, and a surgeon verified the diagnosis. The patient fell into my hands some years afterward. She continued to have pain on the right side, radiating up to the right shoulder blade, with nausea and vomiting. In the meantime she developed strangulated hernia at the seat of the old incision. She was again rushed off to a surgeon, who afterward told me that he had palpated the gallbladder and could not find stones. After her return from the hospital she developed cystitis, and by that time I could feel a distinct mass in her right loin. On operation there was found a large pus cavity in the central part of which there was a renal stone. It is my opinion that that stone had existed from the very beginning.

DR. H. A. CLEAVER, Wilmington: This collection of stones was one of the greatest known. At the time when I first saw the plate I could hardly believe my eyes. It seemed to me incredible. In kidney calculus, clinical diagnosis is not sufficient. The history and urinalysis are important; but in any case with suspicious symptoms around the kidney, diagnosis is likely to be in doubt until the roentgenologist has made a careful examination.

Some Points in the Treatment of Fractures

DR. HAROLD L. SPRINGER, Wilmington: A roentgenogram should be made by an experienced man in all cases, whether one is sure of the diagnosis or not. This will serve as a protection for the physician, as well as give the patient the benefit of any doubt that might exist as to the correct diagnosis. It will also be of value in case of any legal complications. An anesthetic should be used without hesitation in securing perfect reduction. Fractures do not require emergency treatment. The soft parts should be given the first attention and allowed to become normal even if it takes several weeks. This will avoid those disastrous complications which require open operation to correct. Open operations should be used only in those cases in which conservative treatment has been tried and failed, with the exception of fractures of the patella, olecranon and capitellum, which should always be treated by the open method. Too absolute fixation of fractures of the shaft of the long bones should be avoided, and rigid immobility in fractures about joints should be secured. All movement in the latter should be postponed until the end of the fourth or fifth week. Disastrous results can be avoided only by the careful treatment of all fractures, particularly in the use of common sense in their dressing; and too much emphasis cannot be laid on the necessity for frequent and repeated inspections of the part to ascertain if it has been perfectly reduced and is remaining in good position, as well as to see that there is no undue pressure on the soft parts causing interference with the circulation.

DISCUSSION

DR. H. A. CLEAVER, Wilmington: It is astonishing what mistakes can be made with a condition apparently so simple as a fracture. An injury to the hip joint or shoulder joint should absolutely not be diagnosed without a roentgenogram.

DR. WILLIAM L. RODMAN, Philadelphia: No one at this time is justified in treating a fracture, particularly about the joints, the elbow joint more than any other, without an accurate diagnosis having been made by means of the Roentgen ray. Lawsuits are very apt to follow fractures that are treated, and for moral reasons we want every support possible. In addition to the valuable aid given by the Roentgen ray, one is putting oneself in a position in which one cannot be criticized if one has called to one's aid so valuable an agent as the Roentgen ray. An anesthetic should be used in practically all cases, particularly in the case of a fracture in a child. It is almost impossible to make an accurate diagnosis without an anesthetic, and it is almost impossible to secure an accurate coaptation of the fragments. Here is where not only the practitioner but also the surgeon fails to do his full duty by the patient. In our efforts to secure absolute immobility of the fragments we sometimes are responsible for ununited fracture. Particularly is that the case in the humerus and femur and in bones in which we know that nonunion or delayed union so frequently occurs. In other words, a certain amount of motion at the seat of fracture is not undesirable in some instances.

Military Preparedness in Relation to the Medical Man

MAJOR LA GARDE, Washington, D. C.: There is a responsibility that the civilian practitioner does not always take to himself when it comes to the condition of war. In the Spanish-American War we were a drop in the bucket as it were in numbers compared to the practitioners of medicine who came into the military establishment. There were six civilian practitioners for every one of the army's four. In the Civil War it was far greater. When it comes to a question of medicomilitary preparedness, your responsibility is

just that much greater than ours, and you must take it home and consider it for all sorts of patriotic reasons. In the countries of France and England and Germany and Russia today every doctor is in one way or another connected with the military establishment. We in the regular army attempt to hold the framework of what you have got to work with in time of war. We keep it going as well as we can. When war comes we have got to have assistance, and we must have assistance that has been prepared and that has been trained, because, if we get people who do not know anything about the subject of camp sanitation, hygiene, administration and all the work that is necessary on the line of communication with an army, the help that we get is worse than useless. So we want an auxiliary staff we can put our hands on and whom we have work for. We have a national guard organization, but they are not sufficient. The general staff desires that there shall be at least six doctors for every thousand strength. We have reason to believe that we shall get that without any trouble from Congress. Congress for various reasons that I will not go into now is very liberal toward the medical department. The achievements of the medical department are world wide. Now what we want from the medical profession outside is assistance so that what we call the Medical Reserve Corps of the Army will be composed of more than average men from civilian life. Now if you will give us licentiates from the National Board of Examiners, which has been proposed, I am sure that I can vouch that after we have trained these men in the summer camps and after we have trained them through the correspondence school, there shall be no breakdown in the medical department of the army.

COLORADO STATE MEDICAL SOCIETY

Forty-Fifth Annual Meeting, held at Denver, Oct. 5-7, 1915

(*Concluded from page 1582*)

Peripheral Facial Paralysis: Treatment of the Refrigeration Type

Dr. George A. Moleen, Denver: When cases are seen early, within from sixty to seventy-two hours, a cantharidal vesication over the mastoid seems to cause a prompt improvement in proportion to the earliness of application, and a calomel purge, preferably in divided doses. The use of salicylates is advisable and seems to do good, rather in view of the stimulating hepatic influence than of their antirheumatic effects. The eye should be guarded through the use of a shield, and bathed and bandaged to keep the lid closed, especially at night. After from two to four days, strychnin increased with moderate rapidity to 1/24 or 1/20 grain should be given, and at the same time gentle massage with the aim to exercise passively the muscles; it is well to advise that voluntary attempts should be made to move the face muscles at the same time. The electric stimulation should be instituted at frequent intervals and for brief periods when the massage is begun. If no faradic contractions can be obtained, the galvanic current should be used. Just sufficient current to accomplish distinct motion is advisable, and if the anode causes a contraction with a less current strength than the cathode, this should be employed. The faradic current should replace the galvanic as soon as contractions may be obtained, unless a current strength is required, which is painful. Electricity has not the slightest curative value, and is used simply to obtain the mechanical stimulation caused by the movement of the paralyzed muscles in order to maintain their nutrition and to avoid atrophy as far as possible. In the more advanced cases, painting the mastoid with caustic solution of iodin, or the internal administration of potassium iodid, or both may be tried. Massage and electrically induced exercise of the muscles, together with strychnin, may be used advantageously. Persistent and patient use of these measures will often be rewarded by marked improvement, for even when the muscles have long since lost their electric contractibility, one must not despair, for electric response has reappeared after having been lost for a year. Recoveries of considerable movement have been observed in cases of even longer standing.

DISCUSSION

Dr. Howell T. Pershing, Denver: My experience has been very much the same as Dr. Moleen's, and I take the same view of the etiology which he has emphasized, namely, persons who suffer from Bell's palsy generally do so because the facial or fallopian canal through which the nerve travels is long, crooked and narrow, and if it is constricted the least bit more than it is in normal individuals, then the nerve has no room for swelling. Then, if the patient is exposed to cold on one side, such as might ordinarily cause rheumatic symptoms of stiff neck and a little pain about the ear, this nerve may swell. As there is no room for it to swell, pressure is immediately exercised, and the nerve fibers will not withstand the pressure and paralysis ensues. Hereditary cases can be explained from the fact that there is the anomaly of undue narrowness of this canal in the family. For instance, I have had four cases of Bell's palsy in one family. The father had two attacks of facial paralysis on the same side; his son had an attack of facial paralysis, and his daughter had a similar attack. I had the opportunity of treating them in all four attacks. As to treatment, if I get the case early, I put a blister behind the mastoid and give the salicylates on the theory that if it is not rheumatism it is something like rheumatism, and the salicylates are good in almost anything that resembles rheumatism. I myself believe these cases are rheumatic and probably infectious, and exposure to cold lowers the resistance and allows the infection to get a start. At any rate, I approve of the treatment which was recommended by Dr. Moleen.

Dr. G. A. Stoddard, Pueblo: It would seem almost presumptuous on my part to take issue with Dr. Pershing in cases of this kind; but I do not think the cause of the trouble is swelling of the nerve itself, but the lining of the cavity through which the nerve passes. It surprises me to hear Dr. Pershing speak of rheumatism as being anything but an infection.

Dr. James A. Patterson, Colorado Springs: I should like to put on record a series of cases in one family. The mother had one or two attacks of Bell's palsy. Her daughter had one attack, and the son had three attacks. The last attack was very persistent, but there was complete recovery. These patients are prone to have more than one attack. I have seen more than one attack in the same patient.

Heat in the Control of Inoperable Cancer

Dr. C. E. Tennant, Denver: Modern investigation seems to prove conclusively that heat is one of the most effective therapeutic means we have in the control of cancer, provided it is properly applied. The subsequent use of the Roentgen ray with crossfire applications of the rays from a hard tube is no doubt good after-treatment. The source of the heat may be varied from that of hot water to the actual cautery, but it must be constant, long continued, and free from insulation in order to spread evenly a temperature of from 120 to 150 F. throughout the mass. In applying the treatment to carcinoma of the pelvis or other easily accessible structures, the Percy cautery irons are probably most satisfactory. The Percy method is proving very satisfactory in inoperable cancers of the lip, face, neck and breast, and I believe it worthy of use as a preliminary treatment in borderline cases of this class, as well as pelvic lesions. This should be followed later by radical excision, thereby doing away with the possible metastatic recurrence.

DISCUSSION

Dr. W. A. Kickland, Fort Collins: There is a difference in the vitality of the cells of a new growth from the cells of normal tissue. This makes it possible to use any one of a number of agents to destroy the cancer cells. Arsenic, zinc chlorid, the Roentgen ray, radium, heat, etc., are not selective in their action in the strict sense of the term, but destroy every living cell which comes under their influence, the weaker ones first, and finally the normal cells. Just how

many degrees of heat there are between that which will cause the death of the abnormal cell and that of a normal one is perhaps still a question. Dr. Percy says that a cancer cell dies at 113 F., while a normal cell lives at 131 F. We know that in the application of heat to the lower forms of life, protoplasmic activity is increased up to 116 F., that at 120 all activity stops, and that the protoplasm will not recover if heated to 125. As a preliminary treatment in some inoperable cases, the application of heat may make some cases operable; but as a means of obtaining a permanent cure, it has not more selection in its action than has a scalpel in the hands of a competent surgeon.

DR. WILLIAM M. SPITZER, Denver: I believe that in the course of time heat will prove very effective in the treatment of not only inoperable but of operable cancer. Cancer of the bladder grows without deep infiltration for a long time. Until this time arrives, when it infiltrates the muscular and the peritoneal coats, we can treat it very successfully with heat. In 25 per cent. of the cases of cancer of the bladder we have heretofore failed to reach any result except death. In the last five or six years we have been able to apply heat to these cancers intravesically with excellent results.

DR. CASPER F. HEGNER, Denver: The resistance of the normal cell depends not entirely on its inherent vitality, but in a large measure on the arterial circulation. Malignant cells may be extremely vascular, but the vascularity depends almost entirely on the venous content. A low grade heat, if applied at a temperature not exceeding 140, will affect actively the circulating blood. If it goes beyond that it causes more or less destruction of the vessel wall and coagulation. If the temperature is kept below that, it will kill nearly all cells having the power of arterial circulation, and a large venous content, and the normal cells having healthy circulation will not be affected. That is a more rational explanation of the efficacy of low grade temperatures in the treatment of malignant growths.

Further Experience in the Use of the Wire Tourniquet in Thyroidectomy

DR. LEONARD FREEMAN, Denver: Several years ago I reported a new, simple and safe method for the performance of partial thyroidectomy by means of the wire tourniquet. Since then I have had occasion to employ the procedure fifty-four times in forty-one cases, and have modified and perfected the technic considerably, so that I now feel justified in declaring that the method is a useful addition to the operative procedures in connection with goiter. The advantages of the wire tourniquet are several: It is easily and rapidly applied, requiring no particular skill in its adjustment and saving considerable time. It effectually controls all hemorrhage, thus obviating the necessity for crowding the field with hemostatic forceps. It does away with danger to either the recurrent laryngeal nerves or the parathyroid bodies, because it is employed at a safe distance from them, and even if they should by any chance be caught, the pressure is not great enough to injure them permanently. It compresses the goiter without crushing it, which is of importance in exophthalmic goiter at least. Lastly, the loops pass through the tissues and prevent the wires from slipping during the course of the resection irrespective of the size of the remaining stump. Neither clamp forceps nor a ligature of any kind answers the same purpose, nor can they be used, except in special cases. Forceps crush the tissues objectionably if they are applied tightly enough to prevent slipping when the lobe is cut away. Sutures are usually placed with much difficulty, and if tight enough to be efficient are apt to cut through, especially if the tissues are soft and vascular. Both forceps and ligatures may crush the nerves or the parathyroids.

DISCUSSION

DR. CHARLES B. LYMAN, Denver: I have seen Dr. Freeman use this method in many cases, and it is extremely satisfactory. There are types of large goiters that are not easily delivered in which it might be objectionable, and when the technic is applied close to the base may produce a sufficient amount of tugging on the trachea to interfere with proper respiration. I prefer to control hemorrhage with hemostats, using small ones, which are not in the way.

DR. CHARLES A. POWERS, Denver: One might perhaps question whether in this day the ligation of important tissues *en masse* is a procedure based on entirely sound surgical principles. I have been thinking that as time goes by Dr. Freeman will resort to the painstaking ligation of the individual vessels.

DR. WILLIAM B. CRAIG, Denver: I dislike to disagree with Dr. Powers. This is a recognized operation, and outside of enucleation of the tumor we have the operation of resection, one that can be done the speediest, and with the least loss of blood. It is the operation of choice. I have done more resections than enucleations or extirpations.

DR. A. S. TAUSSIG, Denver: The average man in doing much goiter work can use this method quite safely. It seems to me, many practitioners could use it who would not undertake it in another way.

DR. FROST C. BUCHTEL, Denver: In the ordinary case of goiter, hemorrhage is not serious. In a large intratracheal goiter, particularly if one has associated with the goiter a small subretrotracheal lobe, hemorrhage is very serious. In a small goiter that is easily dislocated, I think the wire tourniquet would be eminently satisfactory. In these cases almost every form of hemostasis is satisfactory.

Etiology, Pathology and Therapy of Hodgkin's Disease and Allied Affections

DR. J. L. YATES, Milwaukee, Wis.: In Hodgkin's disease there are four quite distinct types of lesion or stages in the development, from the earliest to the latest, or possibly from the most acute to the most chronic. The first has been reproduced experimentally. The other three are well established. Atypical lesions are remarkably numerous, and since apparently they may develop as the result of favorable therapy, it is fair to assume that they may be the result in part of variations in virulence and resistance. Since Bunting obtained the *B. hodgkini* in February, 1912, he has been able to cultivate it from all fresh affected tissue wherein the histologic diagnosis was positive or when the blood picture of the patient was characteristic unless that tissue had been contaminated or had been recently actively treated by the Roentgen ray. He has recovered it in pure culture five times from one individual at various intervals extending over three and a half years, three times from another, and twice from two others. Recently one of our earliest patients from whom a mass of cervical glands had been removed eight years previously suffered a relapse, and the organism was obtained from a recent axillary enlargement. The inoculation of dogs with small doses over many months has produced the chronic changes in the germinal centers in lymph glands and in the spleen identical with those occurring in Hodgkin's disease and Banti's disease, respectively. Moreover, these experimental animals and one normal man who was given a polyvalent vaccine prepared from similar organisms all developed the characteristic blood changes, the man reverting to normal after the vaccination was discontinued.

A study of our experiences and a review of the literature have indicated that certain more or less generally accepted therapeutic measures are harmful or futile. Arsenic is of benefit solely as a tonic. The administration of salvarsan is of no lasting if any benefit. Roentgen therapy must be given as an adjunct, since no cure due to this agency alone is on record. Aside from burns, the progress of the disease may be affected unfavorably by ill-advised roentgenologic treatments. Partial excisions are as indefensible as in cancer therapy, and this applies equally to the removal of test glands. A probable diagnosis can be obtained from the clinical history, the blood picture, the reaction to tuberculin and physical examination. If radical treatment be indicated, a primary excision with frozen section diagnosis may immediately precede it. Otherwise there is nothing to be gained for the patient but a probably certain diagnosis at the risk of a grave dissemination of the process. The only justification for routine test gland excision, the preparation of an autogenous vaccine, has been eliminated from our work.

MINNESOTA STATE MEDICAL ASSOCIATION

Forty-Seventh Annual Meeting, held at Rochester, September 30 and October 1, 1915

The President, Dr. J. T. Rogers, St. Paul, in the Chair

Radium in Dermatology

Dr. S. E. Sweitzer, Minneapolis: Radium has a definite value in the treatment of certain skin conditions. It is easily controlled and of accurate dosage. Its application is unattended by pain and is very pleasing to the patients, especially the young and the very old. The cosmetic results are excellent.

DISCUSSION

Dr. G. P. Crume, Minneapolis: The rays from the salts of radium or radioactive substances are very like those from the Roentgen-ray tube. Whether or not the emanations are identical in substance is not known, but their effect on normal and diseased tissues appears to be the same. The reactions are certainly very similar. Each one possesses some advantages, due chiefly to the form in which used. For example, radium lends itself especially to use in the cavities of the body, as the mouth, rectum and vagina, or may be placed in a capillary tube and inserted into a tumor with the hypodermic needle. The chief objection is that there is only a very limited quantity available, and the applicators are small, making it very tedious to radiate a large area.

Dr. G. B. New, Rochester: In treating large cavernous angiomas frequently seen in children, a large tube inserted directly into the tumor through a small incision, and left in for a longer time than the ordinary exposure, will give much better results. In large cavernous angiomas, the result is better if we make a small slit in the tumor and insert a large radium tube in the mass instead of using superficial packs outside.

Dr. R. E. Farr, Minneapolis: Some years ago under the use of the Roentgen ray in this class of cases I succeeded in obtaining a clinical cure in a number of instances, but later become dissatisfied with that treatment on account of failures. In those cases in which surgery does not hold out very hopeful success, radium can be tried.

Dr. J. W. Little, Minneapolis: When a tracheotomy tube is worn for a long time, we find that the granulations are not only around the tube but also in the trachea itself; and when the tube is removed, these granulations will fill up the trachea and cause difficult breathing. The tube has to be reinserted. Radium can be used here to get rid of these granulations and also the superficial ones, by being applied externally.

Dr. E. H. Beckman, Rochester: There is no question that epithelioma in the early stages is an absolutely local disease, and as such can be cured in a great many cases with radium and with the Roentgen ray. Very often in growths about the eye or on the cheek, a great deal better cosmetic results can be obtained with radium than with excision. But it must be remembered that we know very little about the penetrating power of the Roentgen ray and radium, and that when a malignant growth is situated in such a position that the adjacent lymph glands are subject to early involvement, while the primary growth may have entirely healed and may stay healed permanently, metastases may occur in the adjacent lymphatics, and for that reason I believe that a great many cases that are being treated at the present time with radium are hardly cases to be treated in that way.

Dr. H. G. Irvine, Minneapolis: Working with radium in dermatology, it should be taken for granted that the cases treated are selected cases, and the experienced dermatologist will not attempt to treat such cases with radium except when patients refuse to undergo operation. After excision, either the Roentgen ray or radium should be used. It is not possible in some locations to be sure that the entire tumor is removed. It is possible after excision that the Roentgen ray or the rays of radium will have a selective action on cancer tissue; exposure of the part to the rays will make one more reasonably sure that any remnants of cancer cells are destroyed. I think it is recognized in such a case as cancer of the lower lip that the best treatment would be first excision, followed by the use of radium or the Roentgen ray.

Syphilis

Dr. N. L. Linneman and Dr. E. L. Tuohy, Duluth: Our study was an attempt at a classification of 387 cases of syphilis. In the primary group there are 18 cases. Four were on the lip (3 on the lower and 1 on the upper); 1 on the right leg, above the knee; 2 at the meatus; 10 at the glans penis, and 1 on the tonsil. In the secondary cases, primary lesion in 5 was extragenital (2 being on the finger, 2 on the lip, and 1 under the scrotum). A mixed infection complicated 3 of the primaries, causing ulceration. There were 61 cases of secondary syphilis; 25 were macular, 13 were maculopapular, 19 papulopustular, and 1 ulcerative or malignant. These came under observation from one to twelve weeks after the onset. Ages varied from 2 to 61. A boy of 2 acquired the disease by being kissed by an aunt who had mucous patches in the mouth. Fifty of these cases occurred under the age of 30. The character and extent of the eruption had little to do with the constitutional disturbance. In the group of cases known to have syphilis, or in which there was parental or conjugal syphilis, there were forty-nine cases. Forty-one consulted us to find out whether they were still in need of treatment, and eight came because husband or wife had been infected, and it was desirous to know whether they had also contracted the disease. All gave positive Wassermanns and were treated. As far as could be ascertained, the disease had been contracted from six months to fifteen years previously. Fourteen of this group came because they were contemplating marriage and wished to know their condition. In most of these cases, the patient felt quite well, but in several, despite the absence of active complaint, evidences of syphilis, such as ulceration of the nose or tender points on the tibia, could be elicited.

In the cutaneous group, there were 40 cases. Mucous patches in the mouth and throat occurred in 3 cases. A great variety of ulcers were encountered: 5 on the leg; 1 on the right arm; 1 on the back of the neck; 5 on the tonsils; 1 on the tongue; 1 on the gum (about the back teeth), and in 1, a very large ulcer on the abdomen, below the umbilicus. One had ulcers about the rectum; 2 had large serpiginous ulcers back of the shoulders and neck; 4 had eczemalike, scaly patches in the palms of the hands; 1 had a rash like psoriasis quite generally over the body; 2 had gumma of the nose; 1, gumma of the upper lip; 1, gumma of the roof of the mouth, and 1, gumma of the left cheek. One had a large broken-down ulcerating gumma of the scalp; 1 had condylomata lata around the vagina and rectum; 6 had a scaly condition, notably on the cheek, tending to cover considerable areas of the body, and 1 patient had pemphiguslike blebs. In this cutaneous group were 7 congenital cases, the ages being from 1 month to 6 years. Ten of this group of acquired syphilis gave no history of the disease, and had no treatment. The others had had short courses of treatment.

In the nervous group there were 31 cases, 4 cases of cerebrospinal syphilis and 27 cases of tabes. Three of the 4 cases of cerebrospinal syphilis were advanced cases, and all 3 had more or less hemiplegia. The other case was an early case. The early case responded to treatment very readily. In one of the advanced cases, which was of five years' standing, the patient gradually grew worse, and finally died. Of the other 2 patients, 1 of them showed some improvement, especially so far as pain was concerned, and also gained considerable in weight, the general condition being improved very much. The other patient was under observation for four months, and thought he was hopeless because he did not improve more rapidly; consequently he quit treatment. Of the 27 cases of tabes, 11 cases were in the stage of ataxia, and had considerable impairment of motion. These cases had nervous symptoms from four to twenty years. Seven of these patients admitted having had syphilis, and had more or less treatment. The other 4 patients

gave no history of syphilis. Five of these patients gave positive Wassermanns, and 3 of the negative Wassermanns gave positive cerebrospinal fluid. Eight of these patients showed more or less improvement, especially so far as pain was concerned. One patient showed very marked improvement, especially so far as motion was concerned. Three patients did not improve any at all as far as I could see. In the other 16 cases, there was little or no impairment of motion, and most of the patients consulted us on account of the pain, usually in the region of the legs. Three of the last group had optic atrophy of the primary type, and the eye symptoms were the primary manifestations of the disease.

DISCUSSION

DR. G. B. EUSTERMAN, Rochester: We are inclined to believe that syphilis predominates in the populous centers. This is true in the main, and it is especially borne out by the fact that in one general hospital in New York over 60 per cent. of the patients registering there showed a positive Wassermann reaction. In our rural centers, also, we are surprised at the frequency of syphilis as the cause of the syndrome. While the Wassermann reaction has been one of the most valuable contributions to medicine, it has its limitations. Repeated positive Wassermann reactions, particularly when they become strong, are definite corroborative evidence of syphilis. This, in addition to other evidences of syphilis, makes it conclusive.

DR. C. R. BALL, St. Paul: In reading up the treatment of syphilis, one of the things which struck me forcibly was this: After reading a long discussion of whether the patients thoroughly treated were any more liable to late nervous syphilis than those who had never received any treatment at all, I found that statistics are quoted on both sides and the conclusion of the men who took part in the discussion, men who had reviewed the literature, and were competent in every way, was that it was about even.

DR. G. J. THOMAS, Rochester: If we are able to cure syphilis, say in ten or fifteen years, we are going to have compiled a large number of treated cases and the results of treatment and the kind of treatment used; and when men treating syphilis will do as Drs. Linneman and Tuohy have done, compile statistics or keep good records, at the same time, we shall have arrived at a certain system of treating this disease. We all know, there are many different ways, different combinations of salvarsan, neosalvarsan, mercury and the iodids, and practitioners seem to obtain the same results; but we must and will go a long way toward getting satisfactory results if we will compile our statistics and keep good records. This paper also emphasizes the point that syphilis is not a venereal or skin disease, but a general disease, and the quicker we realize that, the quicker shall we be able to cure it.

Medical Treatment of Diabetics Preparatory to Surgical Treatment

DR. DAVID M. BERKMAN, Rochester: Twenty-six patients suffering from glucosuria have been operated on in the Mayo Clinic during the past year. Two of these patients died following operation (mortality 7.7 per cent.): one died in typical coma, the other apparently from the result of the surgical condition. The observation of the diacetic acid and total ammonia output in twenty-four hours is of more importance than the sugar itself. The ultimate aim of treatment is not merely to render the urine sugar free but to decrease the tendency to acidosis and increase carbohydrate tolerance. Large doses of alkalies are urged, preferably sodium bicarbonate, for several days previous to and also after operation, since in this way the neutralization and elimination of the acids formed in the blood are greatly facilitated. Local anesthesia should be used whenever possible. Ether is the safest of the general anesthetics. In the series of cases reported, novocain was used in five instances, combined novocain and ether in one, and ether the remaining twenty. The operative conditions were varied.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Tropical Diseases and Preventive Medicine, New Orleans

September, III, No. 3, pp. 119-182

1 Epidemiology of Plague in New Orleans. R. H. Creel, San Juan, P. R.
2 *Epizootic Lymphangitis and Sporotrichosis. K. F. Meyer, Berkeley, Calif.
3 *Epidemiologic Study of Poliomyelitis. W. A. Sawyer, San Francisco.

2. Lymphangitis and Sporotrichosis.—Epizootic lymphangitis of equines, Meyer says, is caused in South Africa, Algeria and Jamaica by a parasite which morphologically (gram-positive, irregular inside structure, budding forms) has all the characteristics of a yeast and which biologically behaves, in the complement fixation test, like blastomyces. The similarity with leishmania bodies, which is suggested by some staining reactions (with Giemsa, etc.) and the position of the parasites in the phagocytes, is explained, and it is demonstrated that the serologic tests and the more careful morphologic studies with hematoxylin stains do not justify the creation of a new species of lymphosporidium (Gasparini, 1908). The parasite is not a protozoon, but a blastomyces, namely, the *Cryptococcus farciminosus*. In the United States the disease which was diagnosed as epizootic lymphangitis in 1907, has been recognized as being sporotrichosis. Epizootic lymphangitis apparently does not exist here. Morphologically, by cultures and serum tests, the two diseases can easily be separated. In horses the parasite of sporotrichosis is rare in the pus and can rarely be demonstrated microscopically. The serums from sporotrichotic infections give complement fixation with the *Cryptococcus farciminosus*, indicating a relation of the *Sporothrix schencki-beurmanni* to the cryptococcus. This observation is further proof of the vegetable nature of the parasite of epizootic lymphangitis. Human infections from equine sources of epizootic lymphangitis and sporotrichosis are rare. Meyer calls attention to the fact that it is in the interest of comparative tropical medicine that suspected cases of infections of epizootic lymphangitis should, in future, be carefully investigated bacteriologically and serologically.

3. Study of Poliomyelitis.—In the summer and fall of 1913 several groups of cases of epidemic poliomyelitis appeared in Northern California. Most of the cases were in small towns in which conditions were more favorable for tracing the probable path of infection than they would have been in larger and less isolated communities. The field investigations were carried on by Sawyer in August and November, 1913. The usual observations regarding symptoms of the cases, sanitation of premises, domestic animals, insects, climate, etc., were made, but only the data which bear on possible methods of transfer of the infection are presented by him. Many of the cases showed interesting group relations, suggesting the possibility of transfer by contact. Observations were made regarding the stable fly (*Stomoxys calcitrans*), but no important new evidence was obtained. In none of the cases was there a history of a stable-fly bite.

In many of the cases reported, the infection can be explained on the theory that epidemic poliomyelitis is transmitted through contact from acute cases or carriers. The active virus of poliomyelitis was demonstrated by animal inoculation to be present in rectal washings obtained from a patient fourteen days after the beginning of the paralysis. The virus of poliomyelitis may survive in demonstrable quantities for at least thirty-six hours in specimens of rectal washings if they are kept packed in ice. Therefore, samples taken during a field investigation may be sent to a central laboratory for examination. Since the active virus may leave the body from the rectum, as well as from the nose and mouth, precautions should be taken in the care of the poliomyelitis patient to prevent infection, not only from the nasal and buccal discharges, but also from feces and soiled bedding.

Archives of Internal Medicine, Chicago

October, XVI, No. 4, pp. 589-692

4 *Syphilis and Raynaud's Disease. H. Lisser, San Francisco.
5 *Study of Atrioventricular Rhythm Following Auricular Flutter. P. D. White, Boston.
6 *Creatinin of Blood in Nephritis. Its Diagnostic Value. V. C. Myers and W. G. Lough, New York
7 *Method for Determination of Plasma and Blood Volume. N. M. Keith, L. G. Rowntree and J. T. Geraghty, Baltimore.
8 Studies of Nitrogen Partition in Blood and Spinal Fluid. A. C. Woods, Boston.
9 *Study of Diagnostic and Prognostic Significance of Venous Pressure Observations in Cardiac Disease. A. H. Clark, Baltimore.
10 Relations of Hypersusceptibility and Insusceptibility Induced in Guinea-Pigs by Instillation of Horse Serum into Nose. H. Sewall and C. Powell, Denver.
11 Changes in P Wave of Human Electrocardiogram. C. H. Goddard, Baltimore.
12 *Severe Anemia with Remarkable Shaped Red Blood Cells and Chronic Leg Ulcer. J. E. Cook and J. Meyer, St. Louis.
13 *Hemolytic Activity of Spleen in Pernicious Anemia. O. H. Robertson, Boston.
14 *Bacteriologic and Clinical Study of Nontuberculous Infections of Respiratory Tract, with Special Reference to Sputum Cultures as Means of Diagnosis. J. A. Luetscher, Baltimore.
15 *Relation of Suprarenals to Pancreas. F. C. Mann and D. Drips, Rochester, Minn.

4. **Syphilis and Raynaud's Disease.**—The case reported by Lisser presented symmetrical gangrene of the feet, and four unquestioned attacks of local asphyxia of the fingers, without exposure to unusual cold. The transient nature of the glucosuria ruled out diabetes as the etiologic factor. A gonorrheal vaginitis with probable arthritis occurred, and a gonorrheal septicemia with emboli might be held responsible for the gangrene of the lower extremities; but the question of such sepsis was never proved and does not seem probable clinically. The patient had congenital syphilis, and an obliterative endarteritis could cause the condition. But the vasomotor attacks of the fingers, combined with the symmetrical gangrene of the feet was so typical of Raynaud's disease that the latter diagnosis must be considered very seriously. In fact, Lisser says, it seems justifiable to conclude that the patient simultaneously suffered from three diseases—gonorrheal vaginitis with arthritis, congenital syphilis and Raynaud's disease.

5. **Atrioventricular Rhythm Following Auricular Flutter.**—A cardiac rhythm is described by White which arises in the atrioventricular junctional tissues of a patient who showed flutter and fibrillation of the auricles prior to the onset of the present rhythm. This atrioventricular rhythm responds in rate readily to exercise, forced respiration, vagal pressure and atropin, but not to digitalis. The sequence of contraction *ts-as* is lengthened by vagal pressure and by digitalis, the latter apparently acting more on the auriculonodal junction than on the pacemaker in the *a-v* tissues. Atropin may shorten the *ts-as* interval prolonged by digitalis, but with the uninfluenced *a-v* rhythm the effect of atropin on the *ts-as* interval is overborne by the increase in the rate of the heart beat resulting from the action of the drug on the *a-v* pacemaker; under such circumstances the *R-P* interval is increased slightly. Premature beats interrupt the rhythm rarely; on such occasions the returning cycles are not compensatory. Coupled beats of an unusual character appear when the *ts-as* interval is markedly prolonged by digitalis or by vagal pressure. The constancy of the atrioventricular rhythm and the failure of sino-auricular rhythm to be restored by atropin or by vagal pressure point to a loss of function of the sino-auricular node, its task as pacemaker being assumed by the atrioventricular junctional tissues.

6. **Creatinin of Blood in Nephritis.**—The estimation of the blood creatinin has been of considerable prognostic value in the work of Myers and Lough, cases showing over 5 mg. per 100 c.c. of blood having invariably terminated fatally. Of eleven cases showing over 5 mg. of creatinin per 100 c.c. of blood, all terminated fatally in from a few days to two months. In this group of cases the phthalein output was practically zero. It seems reasonable to conclude that when a noticeable retention of creatinin has occurred, the functional condition of the kidney has been gravely impaired. In the authors' experience creatinin values from 2.5 to 3.0 mg. per 100 c.c. of blood should be viewed with suspicion and figures of from 3.0 to 5.0 mg. regarded as decidedly unfavorable, while figures over 5 mg. probably indicate an early fatal termination.

7. **Method for Determination of Plasma and Blood Volume.**—The principle underlying the method used by Keith, Rowntree and Geraghty is the introduction directly into the circulation of a nontoxic, slowly absorbable dye, which remains in the plasma long enough for thorough mixing, and the determination of its concentration in the plasma colorimetrically by comparison with a suitable standard mixture of dye and serum. The blood normally constitutes 8.8 per cent., or 1/11.4 of the body weight. Normal individuals have approximately 85 c.c. of blood per kilogram, the extremes being 78 and 97 per kilogram. In pregnancy, before term, the blood and plasma volumes are increased. A condition of serous plethora exists. Within a week or two after delivery, the blood values return to normal. In obesity, the plasma and blood volumes are relatively small. Many cases of anemia exhibit a relatively large plasma volume. Polycythemia in the sense of a high blood count may be dependent on a low plasma volume. It may be associated with a large plasma volume, in which case true plethora is indicated. Hyperglycemia exists without increase in blood volume. In anasarca accompanying myocardial insufficiency the blood volume may be absolutely increased. A small volume is shown in many cases of marked hypertension. Therefore so far as these studies go it would appear that hypertension is not dependent on a large blood volume.

9. **Venous Pressure in Cardiac Disease.**—The venous pressure was followed by Clark at frequent intervals in fourteen cases of cardiac insufficiency at various stages of decompensation and compensation. Two hundred and seventy-six observations were made. Hooker's modified method was used. A diurnal variation in venous pressure of from 8 to 12 cm. of water was noted in four normal and four cardiac cases, all the patients being confined to bed. This variation was based on two-hourly observations over a period of twenty-four hours. It was found that the highest venous pressures occurred during the sleeping hours in the cardiac cases, while in the normal cases, as previously observed by Hooker, the lowest pressures of diurnal variation occurred at night. In the patients who died, either a rapid rise in venous pressure or a continuously high pressure above the 20 cm. level was observed before death. A venous pressure continuously above 20 cm., which was not lowered by the digitalis series, was an indication of grave cardiac involvement.

A venous pressure continuously below 20 cm. gave no definite indication as to the effect of digitalis or strophanthin therapy. A fall in systolic arterial pressure and a rise in venous pressure occurred in four cases before death. Otherwise no constant relation could be noted either between the systolic, the diastolic, the pulse pressure, or the amplitude-frequency product on the one hand, and the venous pressure on the other. Venous pressure and urine output generally showed an inverse variation. The variation was usually coincident, but, if coincidence did not occur, the changes in venous pressure tended to precede the changes in kidney function. The venous pressure was lowered in seven out of eight pleural tappings. Venesection lowered the venous pressure in three cases observed, but the subsequent rise in pressure was rapid.

12. **Anemia with Remarkable Red Blood Cells.**—Many of the red cells in the case cited by Cook and Meyer, about one in three, on rough count, were elongated, oat-shaped or crescent-shaped, with the same color and structure as the normal red blood cells. Some of the crescent-shaped cells in the fresh drop would curl and bend as if they were unusually pliable. There was considerable variation in the size of the red cells and also many structures which seemed to be fragments of cells, as if some of the cells had been crushed. The rather uniform character of these fragments, however, suggests that they were not artefacts. Nucleated reds were always present

and at times were quite numerous. With Romanowsky stains there was only slight polychromatophilia. The red cells varied in number between 1,800,000 and 3,100,000, usually about 2,500,000; there was at all times a leukocytosis of mild degree; the color index averaged slightly below 1, and there was a constant eosinophilia at the expense of the polymorphonuclear cells.

13. **Hemolytic Activity of Spleen in Pernicious Anemia.**—In a study of the hemolytic activity of the fresh spleen obtained by Robertson at operation, from six patients with pernicious anemia, it was found that extracts of the spleen pulp made with both normal salt solution and alcohol, possessed no hemolytic properties. An ethereal extract, on the other hand, showed a marked hemolytic action. However, the hemolytic substance contained in this extract belonged to the group of unsaturated fatty acids and has been obtained in equally strong concentration from the normal liver and intestine. The only change in the splenic vein blood obtained at operation, which could not be accounted for by manipulation, was a decreased resistance of the red cells. These cells were definitely less resistant than those of the peripheral circulation in the same individual and in normal controls. These findings seem to exclude any gross or easily demonstrable manifestation of hemolytic activity on the part of the spleen. However, the decreased resistance of the red cells in the splenic vein, would suggest that the spleen in pernicious anemia elaborated some toxic substance or enzyme which so injures the blood cells during their passage through that organ that they are more susceptible than normally to destruction elsewhere. It seems probable that in some other part of the body there is elaborated an abnormal hemolysin or an abnormally acting normal hemolysin.

14. **Nontuberculous Infections and Value of Sputum Cultures.**—According to Leutscher the pneumococcus is the cause of 62.44 per cent. of all the nontuberculous infections below the larynx, and the influenza bacillus in 28.5 per cent. These two organisms cause 90.94 per cent. of the infections of the bronchi and lungs; 74.96 per cent. of the infections of the larynx, and 31.29 per cent. of the infections of the nose, throat and sinuses. The streptococcus, contrary to common belief and textbook reports, is only rarely the cause of infections in the lungs, and when found, is usually associated with complications such as lung abscess, bronchiectasis, carcinoma, etc. In infections of the head, however, it assumes the predominant rôle, especially in the tonsils. The *Staphylococcus aureus* was never found to be the cause of the acute infections of the lungs or larynx and only once was it found in acute coryza and acute sinusitis. The *Micrococcus catarrhalis* may cause rhinitis, laryngitis, acute bronchitis and acute bronchopneumonia. It was found in pure culture in three out of thirty-seven cases of acute rhinitis, five out of thirty-eight cases of acute laryngitis, and in one each of acute bronchitis and primary bronchopneumonia. The colon and typhoid bacillus rarely if ever produce acute lesions in the lung. The typhoid bacillus, however, may produce lung abscess following an infarct.

15. **Relation of Suprarenals to Pancreas.**—Mann and Drips were unable to demonstrate any specific relationship between the suprarenals and the pancreas.

Boston Medical and Surgical Journal

October 21, CLXXIII, No. 17, pp. 603-646

16 Relation of Medical Profession to Preventive Medicine. H. Emerson, New York.
17 Syphilis We See But Do Not Recognize and Importance of Familial Studies. H. F. Stoll, Hartford, Conn.
18 Some of Anatomic Pathologic Problems in Tuberculosis. F. M. Pottenger, Monrovia, Cal.
19 Acute Otitis Media in Infancy and Early Childhood; Avoidable Mistakes in Diagnosis, Prevention, Treatment. W. R. P. Emerson, Boston.
20 Can Speech Present a Sign of Congenital Syphilis? W. B. Swift, Boston.
21 Unusual Case of Obstructing Prostate Diagnosticated with Difficulty from Tabes. J. D. Barney and J. B. Ayer, Boston.
22 Report of Interesting Stomach Case. F. E. Lewis, Newton, and R. D. Leonard, Boston.

Illinois Medical Journal, Chicago

October, XXVIII, No. 4, pp. 241-320

23 Mental Disease. C. W. Sawyer, Marion, Ohio.
24 Observations in Psychiatry. B. F. Williams, Lincoln, Neb.
25 Care of Insane Under Illinois State Board of Administration. H. J. Gahagan, Elgin.
26 Abnormal Conditions of Thyroid Gland and Its Relationship to Neurasthenia and Mental Defects. C. L. Reeder, Tulsa, Okla.
27 Psychoses in Twins. P. B. Newcomb, Osawatomie, Kan.
28 Mental Hygiene in Childhood. E. B. McCready, Pittsburgh.
29 Relation of Pfropfhebephrenia and Dementia Praecox to Crime. W. J. Hickson, Chicago.
30 Genesis of Certain Phenomena as Interpreted in Psychanalytical Study of Case of Paranoid Dementia Praecox and Case of Hysteria. M. A. Bahr, Indianapolis.
31 Why Delay in Recognizing Locomotor Ataxia? C. F. Neu, Indianapolis.
32 Remedies in Crime Situation. W. Healy, Chicago.
33 Value of Environment. H. P. Sights, Hopkinsville, Ky.
34 Prevalence of Syphilis in Penal Institution. O. M. Kramer, Columbus.
35 Inherited Syphilis in Feeblemindedness. W. H. McKay, Columbus.
36 Mental Examination of Delinquent Boys and Girls. T. H. Haines, Columbus.
37 Diagnosis and Present Status of Treatment of Syphilis. L. D. Smith, Chicago.
38 Pre-Institutional Care of Insane. C. C. Ellis, Dunning.
39 Causative Factors in Psychoneuroses. M. Solomon, Chicago.

Journal of Experimental Medicine, Lancaster, Pa.

October, XXII, No. 4, pp. 389-516

40 Chemoserotherapy of Experimental Pneumococcal Infection. H. F. Moore, New York.
41 *Mechanism of Anaphylactic Shock. J. W. Jobling, W. Petersen and A. A. Eggstein, Nashville, Tenn.
42 *Biology of Peripheral Nerves in Transplantation. R. Ingebrigtsen, Christiania.
43 *Diagnostic Value of Placental Blood Film in Estivo-Autumnal Malaria. H. C. Clark, Ancon, Canal Zone.
44 *Immunologic Study of Bacillus Influenza. M. Wollstein, New York.
45 *Mechanism of Curative Action of Antipneumococcus Serum. C. G. Bull, New York.
46 *Method of Serum Treatment of Pneumococcic Septicemia in Rabbits. C. G. Bull, New York.
47 *Fate of Typhoid Bacilli When Injected Intravenously into Normal Rabbits. C. G. Bull, New York.
48 Agglutination of Bacteria in Vivo. C. G. Bull, New York.
49 *Fatty Degeneration of Cerebral Cortex in Psychoses, with Special Reference to Dementia Praecox. H. A. Cotton, Trenton, N. J.

41. **Mechanism of Anaphylactic Shock.**—The mechanism of acute intoxication is stated by the authors to be as follows: An immediate mobilization of a nonspecific protease in large amounts; the formation of a state of antiferment deficiency through colloidal changes; a simultaneous cleavage of serum proteins (proteoses) through the peptone stage to amino-acids; an intoxication by these peptones with a resulting cellular injury, made evident by an increase in serum lipase, the fall in temperature and other manifestations of acute shock. The elements of specificity lie in the mobilization of the nonspecific cellular ferment and the colloidal changes in the serum, not in the production of specific ferments.

42. **Peripheral Nerves in Transplantation.**—Ingebrigtsen found that in autoplastic transplanted nerves a degenerative process occurs which resembles the ordinary Wallerian degeneration, but appears a little more slowly than the latter. The cells of Schwann are in a condition of survival and are capable of multiplication after the transplantation. In homoplastic transplanted nerves a degenerative process resembling a Wallerian degeneration, somewhat delayed, occurs. The cells of Schwann multiply, and for sometime at least are in a condition of survival. After twelve to fourteen days an abundant and increasing immigration of lymphocytes is observed, and from the eighteenth day the cells of Schwann develop a necrobiotic appearance. In heteroplastic transplanted nerves numerous myelin ovoids are formed during the first four to five days, but there is no proliferation of the cells of Schwann and no Wallerian degeneration is seen. The graft becomes necrotic within about two weeks.

The formation of ovoids that occurs during the first four to five days after the performance of the heteroplastic transplantation does not reveal the condition of the life of the

graft. This formation of myelin ovoids is found in the nerve fibers when they have been kept in an incubator for twenty-four hours in Ringer solution or in homologous or heterologous serum, but it is not found in the fibers after their incubation in isotonic salt soution, the presence of calcium being necessary for the occurrence of ovoid formation. Heteroplastic transplanted nerves become necrotic. They are unsuitable for bridges in cases of nerve defects, and Ingebrigtsen's results explain the failure of the attempts at heteroplastic transplantation of nerves in human beings. To bridge a nerve defect by implantation one must use autoplastic or homoplastic grafts. The occurrence of a Wallerian degeneration in these grafts during the first two or three weeks after the transplantation should make bridging a promising operation; for in this period the grafts resemble the peripheral part of a divided nerve and must be assumed to be capable of regeneration, and thus are different from dead material.

43. **Value of Placental Blood Film in Malaria.**—Clark claims that the pregnant state encourages attacks of malaria by lowering bodily resistance and by furnishing an additional harbor for the development of parasites. A tenable theory in regard to most attacks of this nature, occurring in cases under professional care, would appear to be the development of latent malaria (malarial carriers) into acute attacks toward the close of the pregnant state. The women who expose themselves offer favorable conditions to the introduction of a primary infection. Malaria frequently interrupts the late stages of pregnancy and sometimes causes the death of the mother and the fetus, more often the latter. The commonest mishap is miscarriage late in pregnancy. Occasional stillbirths occur and sometimes there is a fatal issue to both the mother and child. Clark found that the placental blood film examination is worthy of routine application wherever estivo-autumnal malaria is endemic. This type of malaria when associated with labor and the early days of the puerperium can be more easily and certainly diagnosed by the use of this film and a polychrome stain than by employing the usual films made from the mother's peripheral blood at the time of labor. The placental film in such an infection offers an abundance of adult parasites and far more evidence of the presence of pigment, while the peripheral blood film frequently offers but a scant number of the small ring or discoid forms of a parasite. The examination of the present series revealed positive placental films in nineteen cases, while but eight of these same cases were positive in the peripheral blood film examination. On the other hand, no peripheral blood films were found positive in which the associated placental films did not reveal a far more abundant evidence of the infection.

44. **Immunologic Study of Bacillus Influenza.**—Briefly, the results of Wollstein's investigation are as follows: Influenza bacilli therefore vary in pathogenic effect both for man and animals, but they are not distinguishable by means of serologic reactions into different types. Apparently all influenza bacilli belong to one class or race, irrespective of origin or virulence.

45. **Curative Action of Antipneumococcus Serum.**—According to Bull an active antipneumococcus serum causes agglutination of pneumococci in vitro and in vivo. The antiserum acts in far greater dilution in causing agglutination as determined by the microscopic than by the macroscopic test. The antiserum when injected into the circulation of rabbits suffering from pneumococcus bacteremia causes a rapid disappearance of the diplococci from the blood. This disappearance is brought about by instantaneous clumping of the diplococci in vivo and the removal of the clumps by the liver, spleen, lungs and possibly other organs. The diplococci which fail of agglutination tend not to be phagocyted and persist longer in viable form than the ingested clumps. The protection afforded by the immune serum is specific for the type organism and is determined by the presence of agglutinins which prepare the pneumococci for removal from the blood and phagocytosis on a large scale. Normal rabbit blood is devoid of agglutinating and of protective effect against virulent pneumococci. Agglutination is not merely an incidental phenomenon, but constitutes an essential process in association with phagocytosis in the protection of the rabbit against pneumococcus infection.

46. **Treatment of Pneumococcic Septicemia in Rabbits.**—The treatment of pneumococcic septicemia in rabbits by small repeated doses of immune serum was successfully carried out by Bull. The number of pneumococci capable of being brought to destruction through phagocytosis in the organs in this way was great. Not all the rabbits treated with small repeated doses of the serum survive. Those that succumb do so, not to a general infection, but to a pneumococcus meningitis. The explanation of this phenomenon is simple. When the number of pneumococci originally inoculated is great a small number penetrate into the subdural space. Those in this space do not come under the influence of the serum, hence they are not agglutinated and prepared for phagocytosis, whence they multiply and set up a fatal meningitis. The activity of the immune serum administered in this way against virulent pneumococci is so great that a revision of ones notions as to the limit of powers of the antiinfectious serums seems necessary. It is patent that the problem is not simply a relation between quantity of immune bodies and number of bacteria. It is more complex than that conception indicates. The factor of the leukocytes and the degree of their possible activities under the conditions of the experiment come into play. Hereafter, in defining the mode and power of action of antiinfectious serums the condition of cooperation of the body forces will have to be more strictly considered.

47. **Fate of Typhoid Bacilli Injected Into Normal Rabbits.**—Bull found that typhoid bacilli are agglutinated promptly in the circulating blood of normal rabbits and quickly removed from the blood stream. The clumped bacilli accumulate in the organs and are taken up by assembled polymorphonuclear leukocytes in the liver, spleen and possibly other organs. The phagocyted clumps of bacilli are digested and destroyed by the phagocytes. Hence, destruction of typhoid bacilli *intra vitam* is brought about by an entirely different process than is the destruction by serum and whole blood in vitro. While the latter is caused by bacteriolysis, the former results from agglutination and intraphagocytic digestion.

49. **Fatty Degeneration of Cerebral Cortex.**—From the data provided by his investigations Cotton concludes that in all pathologic processes of the cortex which end in dementia and death, the fatty degeneration of the elements of the cortex plays a not unimportant part. The characteristic change for most of the psychoses is found in a great increase in amount of fatty deposits when compared to normal individuals of the same age. In some processes such as senile dementia and dementia praecox the fatty substance appears to fill completely the cell body, and these cells have apparently lost all their functioning power. It is not common to find the fatty deposits in the processes of the ganglion cells except in dementia praecox, and to a limited extent in senile dementia. In other cases the pathologic variety of the fatty deposits in the ganglion cells is seen to be diffused over the whole ganglion cell. Cotton was able especially to observe this in infectious psychoses, in general paralysis, and in epilepsy. The so-called central neuritis assumes a peculiar attitude in that it plainly leads swiftly to an acute fatty degeneration of the ganglion cells, in which there exists an inclination of the fatty granules to flow together into large masses. Frequently the fatty degeneration of the ganglion cells appears to be connected with the sclerosis of the cells, especially when it is a matter of slowly progressing alterations of degeneration. In the young, chronic cases of dementia praecox, far-reaching fatty degeneration of the ganglion cells, especially in the second and third cortical strata, likewise occurs. These findings should constitute an important contribution to the pathologic anatomy of dementia praecox.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

October, VII, No. 3, pp. 225-383

50 *Seat of Emetic Action of Various Drugs. C. Eggleston and R. A. Hatcher, New York.
51 *Influence of Salicylates on Elimination of Uric Acid and Other Waste Products from Blood. W. Denis, Boston.
52 *Studies on Circulation in Man: Change Produced in Blood Flow (in Hands) Under Influence of Digitalis in Cases of Auricular Fibrillation. G. N. Stewart and R. W. Scott, Cleveland.
53 Id. Criteria by Which Deficiencies in Blood Flow (in Hands or Feet) Due to Mechanical Causes May Be Discriminated from Changes Due to Functional (Vasomotor) Causes. G. N. Stewart, Cleveland.
54 *Effects of Veratrum Viride and Cevadin (Veratrin). J. D. Pilcher and T. Sollmann, Omaha.
55 *Physiologic Test for Cholin and Some of Its Applications. R. Hunt, Boston.
56 Action of Opium Alkaloids, Individually and in Combination with Each Other, on Respiration. D. I. Macht, Baltimore.
57 Vasomotor Reaction in Nicotin; Locus of Stimulation. R. G. Hoskins and S. W. Ranson, Chicago.

50. **Seat of Emetic Action of Various Drugs.**—The results of approximately 500 experiments, made to determine the probable seat of the emetic action of some of the more important drugs, and of others of less importance are reported by Eggleston and Hatcher. They found that practically all alkaloids and alkaloidal drugs in common use, including morphin and preparations containing it, which produce nausea and vomiting, either as their chief or as their side actions, do so by direct action on the vomiting center. Sodium salicylate, picrotoxin and the digitalis bodies also produce nausea and emesis through direct central action. There may be, in the case of certain drugs with irritant properties, synergistic reflex and central actions, whereby a smaller dose by mouth may be more effective than would be the case for either action alone. An illustration of this seems to be afforded by emetin. The evidence in favor of the central action does not in every instance exclude the possibility of the drugs also having an irritant action on the alimentary mucosa when given orally. It is probable that the ipecac alkaloids, veratrin and sodium salicylate may have this reflex action in man, at least in susceptible individuals. Some of the advantages claimed for certain proprietary preparations of opium, such as narcophin and pantopium are refuted by the results of the authors' experiments, and they believe that this is also probably true, to a certain extent, of some of the proprietary preparations of salicylic acid.

51. **Influence of Salicylates.**—The increased output of uric acid following salicylate medication, in Denis' opinion, is due to a lowered threshold value of the kidney, not only for uric acid, but in all probability for other waste products as well. Such being the case, he says, it may well be that the beneficial effects resulting from the use of salicylates in acute rheumatic fever, may in part, at least, be due to a power possessed by this class of drugs of increasing kidney permeability, thereby facilitating the rapid and more or less complete excretion of the toxins which produce symptoms of these diseases.

52. **Influence of Digitalis in Cases of Auricular Fibrillation.**—In three cases with auricular fibrillation, the blood flow in the hands was promptly and decidedly increased after the administration of digitalis. In a fourth case, which had not been considered to respond well to digitalis, the hand flow was somewhat increased when the drug was stopped after a rather long course of it. Digitalis having been again begun, the hand flow at the end of a week was again found to be diminished.

54. **Effects of Veratrum Viride.**—According to Pilcher and Sollmann veratrum viride and the related alkaloid cevadin are without direct action on the vasomotor center. As a result of anemia from the fall in blood pressure, or from asphyxia from respiratory depression, the center may be stimulated in about half the experiments; such action may be prevented by artificial respiration. Convulsant doses of cevadin also increase the central vasomotor tone.

55. **Physiologic Test for Cholin.**—The method proposed by Hunt consists in converting the cholin into the acetyl derivative (by heating the cholin with acetyl-chlorid in a sealed tube in the water bath) and testing the physiologic action of the reaction product. Details as to the method as applied to various fluids and organs are given.

Kentucky Medical Journal, Bowling Green

October, XIII, No. 11, pp. 471-506

58 Today and Yesterday in Medicine. O. P. Nuckols, Pineville.
59 Ossification of Bones of Hand. J. W. Pryor, Lexington.
60 Common Sense in Dermatology. M. L. Ravitch, Louisville.
61 Difficult Presentations. J. T. Reddick, Paducah.
62 Indications for and Limitations of Turbinectomy. C. W. Reynolds, Covington.
63 Scopolamin as General Anesthetic in Surgery. J. O. Jenkins, Newport.
64 Twilight Sleep. A. E. Threlkeld, Wheatley.
65 Law of Heredity. M. Bell, Jr., Eminence.
66 Placenta Praevia Centralis; Cesarean Section for Relief. W. O. Humphrey, Louisville.

Lancet-Clinic, Cincinnati

October 2, CXIV, No. 14, pp. 289-310

67 Diagnosis and Treatment of Fistula in Ano. R. H. Barnes, St. Louis.
68 Operations on Gallbladder in Relation to Life Expectancy. W. S. Harpole, Chicago.
69 Use of Pituitary Extract in Inevitable and Incomplete Abortions. B. J. O'Connor, Louisville, Ky.
70 Obscure Fevers of Infancy and Childhood. B. K. Rachford, Cincinnati.

October 9, No. 15, pp. 311-338

71 Differential Diagnosis and Preoperative Treatment of Prostatic Hypertrophy. W. S. Ehrich, Evansville, Ind.
72 Pellagra and Uncinaria Disease in Relation to Life Insurance. M. J. White, Washington, D. C.
73 Principles and Methods which Result in Intellectual Precocity. T. A. Williams, Washington, D. C.

Medical Record, New York

October 23, LXXXVIII, No. 17, pp. 681-726

74 Pancreas Stone Colic. M. Einhorn, New York.
75 Impotence in Male. M. Hühner, New York.
76 *Immunized Milk in Prophylaxis and Treatment of Typhoid. J. Rosenberg, New York.
77 Section of Posterior Roots of Sixth to Tenth Thoracic Nerves for Relief of Severe Gastric Crises in Locomotor Ataxia. F. W. Bancroft, New York.
78 Intelligent Treatment of Diseases of Skin. W. S. Walsh, Providence, R. I.
79 Differential Diagnosis between Cerebral Hemorrhage and Softening Due to Thrombosis. G. Burke and J. Nuzum, Chicago.

76. **Immunized Milk in Treatment of Typhoid.**—Rosenberg states that immunized milk is absolutely safe and harmless, while antityphoid vaccination often causes more or less severe systemic symptoms. Immunized milk is an excellent medium to provide general immunization for typhoid at trifling expense and without risk. It causes neither local nor systemic ill-effects. It is fatal to but one organism, namely, the typhoid bacillus. Drinking one quart of immunized milk per day for a period of about two weeks provides adequate protection for two months. Immunity, however, can be prolonged indefinitely by drinking one or two quarts of immunized milk every ten days to two weeks. Besides an efficient prophylactic, immunized milk will probably prove itself to be a valuable aid in the treatment of typhoid, especially in the early stage of the disease. Rosenberg urges that immunized milk should be used at the onset, even before a diagnosis is possible, and should be given in every suspicious case; it may succeed in aborting the disease, preventing the infection by augmenting the body's natural defenses. It will provide the needed antibodies to destroy the invading host, neutralize the bacterial toxins at a period when the body is not as yet prepared to cope with the infectious organism.

Michigan State Medical Society Journal, Grand Rapids

October, XIV, No. 10, pp. 501-554

80 Past, Present and Future of Michigan State Medical Society. R. Peterson, Ann Arbor.
81 Medical Schools of Last Half Century. T. A. McGraw, Detroit.
82 Retrospect of Early History of Michigan State Medical Society. G. E. Ranney, Lansing.
83 Two Tumors of Head. C. G. Darling, Ann Arbor.
84 Case of Spindle-Cell Sarcoma of Accessory Sinuses. R. B. Canfield, Ann Arbor.
85 Age, Relationship Between Types of Malignant Diseases. C. V. Weller, Ann Arbor.

Modern Hospital, St. Louis

October, V, No. 4, pp. 221-310

86 Requirements of Modern Contagious Disease Hospitals. F. W. Southworth and L. W. Johnson, Washington, D. C.
87 First County Hospital Under New Texas Law. L. Shenners.
88 Hospital Noises and How to Minimize Them. B. Hollings, Boston.
89 Training School Organization and Work in Mental Hospitals. C. McCabe, Baltimore.
90 Hospital Library; Books for Patients. E. K. Jones, Waverly, Mass.
91 E. W. Sparrow Hospital, of Lansing, Michigan. M. Landis, Lansing, Mich.
92 Baker Sanatorium at Charleston, South Carolina. J. D. Newcomer, Charleston, S. C.
93 Training of Superintendents of Small Hospitals. E. J. Johns.
94 Building of Hospital; Construction. O. H. Bartine, New York.
95 Mechanical Equipment of Hospitals. D. D. Kimball, New York.

New Jersey Medical Society Journal, Orange

October, XII, No. 10, pp. 481-532

96 Every Obstetric Case a Surgical Case. J. W. Fithian, Camden.
97 Medical Witness. W. J. Arlitz, Hoboken.
98 Treatment of Oid Brain Injuries. M. W. Reddan, Trenton.
99 Laryngoscopy, Bronchoscopy and Esophagoscopy. H. Vaughan, Morristown.

New Orleans Medical and Surgical Journal

October, LXVIII, No. 4, pp. 215-286

100 Cardiospasm Causing Enormous Dilatation of Esophagus. (To be continued.) R. Matas, New Orleans.
101 Infectious Diarrhea. C. J. Bloom, New Orleans.
102 Incomplete Amputation of Penis with Successful Repair. P. J. Gelpi, New Orleans.
103 Clinical Interpretation of Serum Tests for Typhoid and for Syphilis. S. C. Jamison, New Orleans.
104 Intestinal Parasites in Honduras. N. Barlow, Cuyamel, Honduras.

Northwest Medicine, Seattle

October, VII, No. 10, pp. 305-338

105 Prevention of Cancer. A. E. Rockey, Portland, Ore.
106 Bacterial Etiology of Rheumatism. C. S. Wilson, Tacoma.
107 Rheumatism as Factor in Surgical Diagnosis. H. E. Allen, Seattle.
108 Relation of Tonsils to Rheumatism. W. Johnston, Spokane.
109 Gastro-Intestinal Conditions and Rheumatism. A. P. Lensman, Seattle.
110 Complications and Sequelae of Rheumatism. W. S. Griswold, Seattle.
111 Treatment of Rheumatism. A. M. Smith, Bellingham.
112 Lymphangioplasty in Treatment of Some Leg Ulcers. J. T. Mason, Seattle.
113 Expert Evidence in Courts from Standpoint of Physician. P. Rockey, Portland, Ore.
114 Tonsillectomy and Illustrations of Operation with Special Knife. S. M. Samuels, Seattle.
115 New Refraction Cabinet. A. B. Mattice, Seattle.

New York Medical Journal

October 23, CII, No. 17, pp. 833-880

116 Tuberculosis of Patella. A. J. Davidson, Philadelphia.
117 Some Unusual Gastro-Intestinal Cases. A. Bassler, New York.
118 Extragenital Chancres. H. K. Gaskill, Philadelphia.
119 Opposite Sex Twins in One Body? W. L. Howard, Westboro, Mass.
120 Endamebic Dysentery. N. Barlow, Cuyamel, Honduras.
121 Epididymis-Vas Anastomosis for Sterility. W. F. Bernart, Chicago.
122 Phenoltetrachlorphthalein Test of Liver Function. M. Kahn and J. R. Johnston, Pittsburgh.
123 Injuries to Bone at Tendon and Ligament Insertions without Local Tenderness. A. H. P. Leuf, Philadelphia.
124 New Profession; Social Welfare Worker. M. B. Gordon, New York.
125 Rectal and Anal Fistula. J. Frankel, New York.

Oklahoma State Medical Association Journal, Muskogee

October, VIII, No. 5, pp. 153-184

126 Phases of Pellagra. F. S. Clinton, Tulsa.
127 Pellagra in Oklahoma and Comparison with Statistics from Elsewhere. C. R. Day, Oklaaoma City.
128 Local Anesthesia. D. E. Little, Eufaula.
129 Surgical Anesthesia. T. C. Burns, Oklahoma City.
130 Local Anesthesia in General Surgery; Prevention of After Pain and Shock. L. F. Watson, Oklahoma City.

Public Health Journal, Toronto

October, VI, No. 10, pp. 477-530

131 Administration of Toronto Department of Public Health. H. L. Brittain, Toronto.
132 Pasteurization of Milk. J. Race, Ottawa.
133 Tuberculosis and Bacteriology of Every Day Life. J. Grant, Ottawa.
134 Registration of Tuberculosis. E. Dyke, Toronto.

Southwest Journal of Medicine and Surgery, El Reno, Okla.

October, XXIII, No. 10, pp. 285-308

135 Pyelitis in Infancy and Childhood. J. O. Segura, Houston, Tex.
136 Present Status of Tonsil Surgery. J. O. McReynolds, Dallas, Tex.

United States Naval Medical Bulletin, Washington, D. C.

October, IX, No. 4, pp. 547-746

137 Epidemiology of Outbreak of Measles at Naval Training Station, Norfolk, Va. C. E. Riggs, U. S. Navy.
138 Present Status of Hospital Corps. W. E. Eaton, U. S. Navy.
139 Use of Hospital Ships in Time of War. R. J. Straeten, U. S. Navy.
140 Venereal Disease Aboard Ship. G. F. Cottle, U. S. Navy.
141 Some Dangers in Passing Ureteral Catheter to Kidney. B. C. Willis, U. S. Navy.
142 Shanghai and Yangtze River Hospitals. R. H. Laning, U. S. Navy.
143 Some Medical Aspects of Upper Yangtze River Country. D. C. Post, U. S. Navy.
144 Some Medical Conditions in China. R. G. Davis, U. S. Navy.
145 Ambulance Motor Boat for Hospital Ships. E. M. Blackwell, U. S. Navy.
146 Unusual Type of Typhus on U. S. S. Monocacy; Report of Case. W. B. Hetfield, U. S. Navy.
147 Injury by Dynamite Explosion. G. C. Thomas and L. W. Johnson, U. S. Navy.
148 Case of Hemorrhagic Pancreatitis. G. C. Thomas and L. W. Johnson, U. S. Navy.
149 Salvarsan in Treatment of Schistosomiasis; Report of Case. D. C. Post, U. S. Navy.
150 Unusually Severe Case of Urticaria. W. E. Eaton, U. S. Navy.
151 Early Reinfection with Syphilis. T. W. Richards, U. S. Navy.
152 Fatal Case of Cecal Ulceration with Extensive Complications. W. L. Mann, Jr., U. S. Navy.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

October 2, II, No. 2857, pp. 493-524

1 *Injuries of Superior Longitudinal Sinus. G. Holmes and P. Sargent.
2 Treatment of Gunshot Wounds of Head, with Special Reference to Apparently Minor Injuries. J. E. H. Roberts.
3 Treatment of Gunshot Wounds of Head. G. G. Taboteau.
4 *Treatment of Septic Wounds by Continuous Oxygenation or Irrigation. W. A. Wood.
5 Sandfly Fever and Bacteriology; Vaccine Treatment. C. J. Stocker.
6 Adaptable Eye Shade for Microscopic Use. S. G. Shattock.

1. Injuries of Superior Longitudinal Sinus.—Up to the present Holmes and Sargent have seen over seventy cases in which the longitudinal sinus was injured or the circulation in its venous tributaries disturbed in its immediate neighborhood, that is, in the lateral lacunae, or in cases in which the veins enter it. In many of these cases there was no direct damage to the brain, either by the projectile or by depressed fragments of bone, but in others the disturbance of the venous circulation was associated with gross cerebral lesions. The symptoms in these cases have varied much according to the severity of the injury and the region in which the sinus was damaged. In many cases in which the chief symptoms were due to injury of the longitudinal sinus or its tributary veins, associated lesions of the brain existed. The most common type of injury is a gutter or tangential wound at the middle line of the head, which may be either sagittal, coronal or oblique. Frequently, however, the injury was a perforating wound or an in-and-out-wound of the skull, the entrance and exit being on opposite sides of the middle line and close to it, with considerable comminution of the bone between them; here the sinus was generally lacerated, and in certain instances it was completely cut through by the missile, but it was occasionally only compressed by indriven fragments of bone.

The distribution of motor symptoms is unusual and the type of motor paralysis likewise. The extent of the palsy varies according to the site, severity and extent of the lesion; in twenty cases all limbs were affected; in thirty-one both legs and one arm were weak; in sixteen only the lower limbs were affected; in six the symptoms were mainly hemiplegic and in five one leg alone presented any palsy. The distribution of the paralysis and its relative severity in different segments of the limbs is, however, peculiar, and differs from that of the cerebral palsies, most commonly seen in civil

practice. The more proximal segments of the upper limbs are most seriously paralyzed, and the weakness diminishes distalward. In this respect the paralysis contrasts strongly with that seen in the ordinary hemiplegia due to vascular lesions, in which the distal segments of the upper limbs are almost invariably more severely affected than the proximal and recover less rapidly. Further, a definite paresis of the face or tongue is extremely uncommon, and is at the most transient, while speech is never affected in the pure sinus injuries. The trunk muscles may be, however, affected, especially those of the back; the patient is then unable to sit up and often cannot roll over in bed.

The distribution of the palsy in the legs is the converse of that of the arms; here it is always the distal movements that suffer more severely, and in slight cases and during the recovery of more severe ones the authors have repeatedly seen complete paralysis of the toes and ankle only, with the knee movements only relatively weak and those of the hips strong. Even more striking than the unusual distribution of the paralysis is the rigidity which is almost always associated with it. It is generally coextensive with the paralysis, and closely related to it in its degree. The early onset of this rigidity is another striking point; the authors have seen it well marked within twenty-four hours of the infliction of the wound, and in some instances at least it has been noticed by the patient almost at once. It has shown no tendency to increase after the patients have reached the base hospitals; that is, usually within forty-eight hours, but, on the other hand, it gradually diminishes *pari passu* with any return of power that may occur.

The rigidity is often so great that the resistance to passive movement is extreme; it may, for instance, be quite impossible for a man of moderate strength to separate the knees. Peripheral stimulation, as pricking the sole or palm, increases the rigidity and the legs may become more rigid when the patient coughs or attempts any strong voluntary movement with his arms. Despite the great rigidity, there seems to be little tendency for contractures, that is, organic shortening of the muscles, to develop. The sensory disturbances in these cases are almost always those of a pure cortical lesion unaccompanied by any shock effect. In a certain number of cases the functions of the bladder were affected. As a rule, the functions of the cranial nerves were unaffected, but in several patients the ocular movements were disturbed. The general symptoms of intracranial pressure have been as a rule pronounced.

4. Septic Wounds Treated by Continuous Oxygenation or Irrigation.—A severely lacerated and septic wound about the knee in a child was treated by Wood by continuous oxygenation under pressure. A rubber bag constructed open at both ends and provided with sleeves at the ends and with a valve through which the oxygen can be introduced, was slipped over the leg like a stocking and the two ends were rendered gas-tight by firm bandaging. Oxygen was introduced from a cylinder up to the pressure of 3 to 4 pounds. With ordinary bandages the bag remained inflated with oxygen for about twelve hours, with rubber bandages, for longer. The wound rapidly cleaned and the granulation tissue assumed a most healthy appearance in a shorter time than one would have expected. The discharge collects at the bottom of the bag and can be either drawn off by a drain tube, or the bag can easily be removed, boiled, replaced and refilled within a short time and without pain.

Indian Medical Gazette, Calcutta

September, L, No. 9, pp. 321-360

7 Some Experiences in War. H. Watts.
8 Review of Year's Medicolegal Work in Calcutta Morgue, 1914 (Including Comparative Figures for Triennium 1912-1914). O. S. Moses.
9 Serodiagnosis of Syphilis. W. D. Sutherland and G. C. Mitra.
10 Acidosis and Edema in Its Relation to Glaucoma. H. Smith.
11 Case of Malingering. A. W. Overbeck-Wright.
12 Case of Typhoid and Paratyphoid. M. L. Treston.
13 Operation of Shortening Round Ligaments for Cure of Retrodisplacements of Uterus. T. Jackson.
14 Second Cesarean Section. E. J. Murphy.
15 Method of Treatment of Hemorrhage from Lateral Sinus. S. Sen.
16 Hemorrhage into Pericardial Sac. L. Fink.
17 Abnormal Labor Cases. D. J. Asana.

Lancet, London

October 2, II, No. 4805, pp. 739-794

18 Operative Findings in Twelve Cases of Chronic Intestinal Stasis. W. S. Bainbridge.
19 Prevention of Fistula in Ano. P. Lockhart-Mummery.
20 Duration of Treatment in One Thousand and Five Hundred Cases. J. Rae.
21 *Two Cases of Plumbism from Unusual Sources. A. J. Hall.
22 *Tonsils and Chronic Cervical Adenitis. H. Gardiner.
23 Shrapnel Located at Back of Orbit; Successful Extraction. W. J. Collins.
24 Massage in After-Treatment of Wounded. J. B. Mennell.
25 Case of Traumatic Tetanus. J. D. Hayward.
26 Cartridge Shot in Appendix. C. C. Boyle.
27 Breathing and Physical Exercises for Use in Cases of Wounds in Pleura, Lung and Diaphragm. C. MacMahon.

21. Plumbism from Unusual Sources.—In the first case cited by Hall the patient drank for some years "horehound beer." While formerly they had sold it in stone jars, recently they had kept it in large barrels in the cellar and "drawn" it up into the shop by an ordinary "beer-tap." This meant several feet of lead piping for the acid solution to pass through. A sample of the "horehound beer" as drawn from the tap for the consumer contained 1 grain of lead per gallon. The second patient was fond of his garden, and in order to protect his fruit and flowers from the birds carried with him an air-gun to shoot the birds whenever he went into the garden. In every suit of clothes he reserved the right-hand vest pocket for the little lead pellets used in his gun, so that at any time he could quickly have a shot at any bird he saw. He had also acquired a habit of constantly putting the finger and thumb of his right hand into this vest pocket and fingering these pellets.

22. Tonsils and Chronic Cervical Adenitis.—Gardiner claims that in the majority of cases (80 per cent.) of chronic cervical adenitis in cases in which no obvious source of infection is present, the tonsils are infected. The size of the tonsil makes no difference as to their infectivity, except that the small fibrotic variety is likely to be more dangerous than the large. The number of cases in which tubercle bacilli are present is relatively small, but is larger than in simple cases of enlarged tonsils. The frequent presence of other organisms than the tubercle bacillus in these cases suggests that a large proportion of the so-called chronic tuberculous glands are in reality chronic septic glands. The organisms are present in the deepest parts of the gland, and are, therefore, only removed by operations involving complete enucleation.

Practitioner, London

October, XCV, No. 4, pp. 449-588

28 Treatment of Acute Gonorrhea. C. Gibbs.
29 Iritis. A. W. Ormond.
30 Treatment of Wounds in War. H. S. Souttar.
31 Acute Mastoiditis. W. M. Mollison.
32 Permeating Mastoiditis. J. B. Pike.
33 Nuclear Segmentation of Neutrophil Leukocytes in Health and Disease. F. E. Taylor.
34 *Dangers of Tuberculin. W. C. Wilkinson.
35 *Emetin Hydrochlorid. W. B. Robinson.
36 Valuation of Therapeutic Results. E. Hughes.
37 Vicious Circle of Habitual Constipation. J. B. Hurry.
38 Case of Traumatic Subdural Hemorrhage. H. V. O'Shea.

34. Dangers of Tuberculin.—The question defended by Wilkinson is that, in the hands of experts, tuberculin is not only free from the dangers which have been associated too lightly and erroneously with its administration, but is at once a valuable aid in diagnosis and an invaluable and indispensable remedy in treatment. He does not contend that it is the *ne plus ultra*, but the irresistible evidence of an experience extending over five years in hundreds of cases of tuberculosis of all forms and in all stages, leaves not the smallest doubt in his mind that an independent and impartial inquiry would disabuse the medical mind of the imaginary evils alleged to arise from its use. Such an inquiry would, in his opinion, dispel many of the errors still hindering a solution of a difficult problem, which has not yet been

approached and analyzed in accordance with the rules of logic and science, and would be the first step toward the general exploitation of tuberculin as a valuable diagnostic agent in doubtful cases of tuberculosis and as an invaluable remedy in a disease which is so widespread and so difficult to treat with success that no useful remedy should be left untried.

35. **Emetin Hydrochlorid.**—Robinson has used this drug with good results in mucous colitis, dysmenorrhea, phthisis and intestinal hemorrhage.

Bulletin de l'Académie de Médecine, Paris

September 21, LXXIV, No. 38, pp. 307-324

39 *Early Disinfection of Wounds. T. Tuffier.
40 Iron Bead in Glove Finger, Connected with Telephone, Locates Foreign Body. (Application de la balance de Hughes.) T. Tuffier.
41 Three-Day Fever Among the Troops at the Dardanelles. (Dengue d'orient.) A. Sarrailhé, P. Armand-Delille and C. Richet fils.
42 *The Gait with Artificial Legs. (Etude cinematographique de la marche chez les sujets amputés de la cuisse ou de la jambe.) Ducroquet.

39. **Early Disinfection of Wounds.**—Tuffier's remarks were summarized in the Paris Letter, p. 1473. He declares that it can never be reiterated too often that infection can be nipped in the bud, while allowed a few hours to develop and spread, it gets quite beyond our control. To nip infection in the bud, the more recent workers have found a hypertonic salt solution most effectual, thanks to its osmotic properties, but it does not check the development of the streptococcus. Tuffier himself prefers Carrel and Dakin's method applied at once and completed within twelve hours. It is proving astonishingly effectual in warding off suppuration, he says.

42. See Paris Letter, p. 1473.

Presse Médicale, Paris

September 23, XXIII, No. 44, pp. 361-368

43 *Tests of Reserve Force of the Heart. (L'aptitude militaire des cardiaques.) A. Martinet.
44 War Delirium in Typhoid. (Les délires guerriers dans la fièvre typhoide.) Devaux and Logre.
45 *Improved Technic for Serodiagnosis of Syphilis. (Une "sensibilisatrice" syphilitique thermolabile; modification de la technique de la réaction Bordet-Geagou-Wassermann.) V. Busila.
46 Severing Tendon in Treatment of Gunshot or Shell Wound. (Des sections tendineuses dans les traumatismes de guerre.) D. de Fortunet.

September 27, No. 45, pp. 369-376

47 *Phagocytosis-Enhancing Action of Magnesium Chlorid. (Cytophylaxie.) P. Delbet and Karajanopoulo.
48 Tardy Hemorrhage After Wound of Artery. (Ouverture tardive des artères dans les plaies par projectiles de guerre.) R. Gregoire.
49 Diplococcus Septicemia. (Diplococcémie.) Broquin-Lacombe and Vulquin.

September 30, No. 46, pp. 377-384

50 *Research on Antiseptics in Treatment of Infected Wounds. H. D. Dakin.
51 *Albuminuria not a Constant Sign of Meningeal Hemorrhage. E. Macris.

43. **Determination of the Reserve Force of the Heart.**—Martinet says that the ordinary methods of examination do not reveal whether the heart will be able to stand sudden stress. Some hearts, even with organic disease, are able to sustain extra strain while others apparently valid break down under it. Clinicians have grown gray, he remarks, studying this subject, but certainty has not yet been realized. The findings with various tests are subjective (dyspnea under exercise), or they are tardy (enlargement of the liver, edema, etc.), or they are not pathognomonic (oliguria, enlargement of the liver, etc.). The only exploratory means at our disposal which yield objective results are the pulse rate and the arterial tension, noting the curves for each, measured as the patient reclines, then again as he stands, and then again after a special exercise (bending the legs twenty times), and then again after reclining anew. In taking these measurements, he waits each time until two successive measures give the same figure, thus eliminating the emotional factor. The curves for the pulse and for the arterial pressure are given for a series of such tests applied to a healthy person and to one with a weak heart. With the former the pulse figures were respectively 76, 80, 96, 76 and 60, while the corresponding pulse with the weak heart was 104, 122, 148, 124 and 120. Between these extremes lies a broad field in which the figures reveal whether the heart is capable of extra effort or will break down under it, thus permitting the sifting out of the men still capable of military service although their cardiovascular system is not intact.

45. **Improved Technic for Serodiagnosis of Syphilis.**—Busila relates that syphilitic serum may contain a sensitizer that resists heating and also one that is destroyed by heat. The deviation of complement and Wassermann tests do not discriminate with sufficient precision between these two sensitizers, while the preponderance or absence of one or the other has a pronounced influence on the outcome of the tests. In order to eliminate error from this source, Busila has modified the technic and states that his method is applicable to all serums and requires only two hours or two and a half from the moment the blood is drawn. Instead of heating, to suppress the human complement, he titrates it simultaneously with the reaction. When the serum is heated this destroys the thermolabile sensitizer, and it is in the cases in which this sensitizer predominates, that the syphilis is most difficult to diagnose. Hence his modified technic is particularly useful, he declares, in cases of latent, imperfectly treated, or "nervous" syphilis.

47. **Cytophylaxis Under Magnesium Chlorid.**—Practically the same article was summarized in these columns October 23, p. 1492.

50. **Technic for Sodium Hypochlorite Disinfection of Wounds.**—The main points in this communication have already been summarized in THE JOURNAL, Oct. 2, 1915, p. 1221.

51. **Albuminuria with Meningeal Hemorrhage.**—Macris' article was summarized on p. 986, Sept. 11, 1915.

Revue Médicale de la Suisse Romande, Geneva

September, XXXV, No. 9, pp. 469-532

52 *Constitutional Iodism and Its Relation to Exophthalmic Goiter. A. Oswald.
53 The Pseudodiphtheria Bacillus. (De la résistance du bacille pseudodiphtérique à la decoloration, moyen de diagnostic différentiel d'avec le bacille diphtérique.) Reh.
54 Bradycardia from Heart Block in Boy of 9. A. d'Espine and Cottin.
55 Trauma as a Factor in Tuberculosis. Meyer.

52. **Constitutional Iodism.**—Oswald discusses the phenomena liable to develop after administration of iodin internally, saying that the Zurich region seems to be the headquarters for this type of disturbances. They were first systematically described in Rilliet's classic work with the above title, published in 1860. The syndrome he described occurs mostly in persons over 40. Besides this, there is a syndrome which resembles exophthalmic goiter in every respect; it develops in the young, and in those who have never had any previous symptoms of exophthalmic goiter, and it usually subsides in time after suspension of the iodin treatment. The entire literature on the subject has been studied by Oswald and he relates considerable personal experiences. Everything seems to indicate that the iodin stimulates the thyroid, and possibly other glands with an internal secretion, to extra functioning. The result is thus the same as in primary exophthalmic goiter, which is now ascribed to extra functioning of the thyroid. Both syndromes are the result of an excess of thyroid secretion being poured into the circulation, and there is no reason for surprise that iodin thus can induce the true Basedow syndrome. A predisposition is necessary for both, but it is not necessary to assume for either that the thyroid is producing an abnormal secretion; an excessive amount of a normal secretion is enough to explain all the symptoms observed, given an abnormally sensitive nervous system. With iodin hyperthyroidism the nervous system is suffering from the iodin, and it recuperates when the iodin is withdrawn. With true exophthalmic goiter, the nervous system is suffering from the chronic oversupply of thyroid secretion and the nervous factor is thus both a predisposing and the provocative ele-

ment in the clinical syndrome. Recuperation is consequently more difficult.

55. **Traumatic Tuberculosis.**—Meyer relates the case of an apparently robust young man who seemed entirely healthy until a shell wound of the chest, which was followed by hemoptysis and tubercle bacilli in the sputum. There is every reason to assume that the tuberculosis might not have developed if it had not been for the chest wound, which evidently roused to virulence some latent tuberculous focus.

Berliner klinische Wochenschrift

September 20, LII, No. 38, pp. 989-1012

56 *Indications and Prognosis in War Wounds of the Nervous System. (Indikationen zu den Massnahmen bei den Kriegsverletzungen des Nervensystems und Prognose dieser Verletzungen an sich und nach den verschiedenen Eingriffen.) L. Bruns.
57 *Influence on Metabolism of Acute Serous Meningitis in a Diabetic. L. Lichtwitz.
58 *Miostagmin Reaction in Cancer. O. Wissing.
59 Influence of Antityphoid Inoculations on Incidence and Course of Typhoid in German Army. (Einfluss der Typhusschutzimpfungen auf die Typhuserkrankungen bei der—Armee im Herbst und Winter, 1914/15.) A. Goldscheider and K. Kroner. Commenced in No. 36.
60 Improved Casts for Fractures. (Vorschlag zur Behandlung der Schussfrakturen im Felde.) G. Frank.

September 27, No. 39, pp. 1013-1032

61 *Sham Cysts in Spinal Meninges. (Meningeale Scheincysten am Rückenmark.) K. Bonhoeffer.
62 Serum Diagnosis of Glanders. (Zur Rotzdiagnose.) W. Pfeiler.
63 Some Judicial Decisions Affecting Physicians in Germany. (Aerztliche Rechtsfragen.) H. Lieske.

56. **Gunshot and Shell Wounds of the Nervous System.**—Bruns is consultant neurologist in the tenth German army corps, and here reviews what he has learned from study of 900 cases traced over considerable periods. The outcome in a large proportion of the cases has been favorable beyond all anticipations, even after wounds of the brain itself. He takes up in turn the injuries of the peripheral nerves, brain and skull and spinal cord and vertebrae, the disturbances from ischemia and other injury of the muscles, the cases of neurasthenia, hysteria, etc., tetanus and other diseases of the nervous system, and cases of aggravation or simulation of such, and the indications for treatment based on these experiences.

57. **Influence of Intercurrent Febrile Diseases on Diabetes.**—The diabetic man of 26 had been able to stand the stress of the campaign for a time, but the lack of proper diet brought weakness and loss of thirty pounds in weight. Then came a mild typhoid and during convalescence febrile serous meningitis developed. Under the influence of the fever and loss of appetite he received only 30.2 calories per kilogram of weight while the output of sugar rose abruptly to such a height that only 19.2 calories remained to be utilized. There must have been destruction of 189 gm. of albumin.

58. **The Miostagmin Reaction in Malignant Disease.**—Wissing has applied the stalagmometer in 115 cases to ascertain the changes in the drop-forming property of the serum in various pathologic conditions. He has modified Ascoli's original technic for this miostagmin reaction by refraining from heating the serum. The reaction is more reliable at room temperature, and the findings during the first hour are the criterion. The reaction is not specific for cancer, but none of the other conditions in which it is likewise positive are liable to be confounded with cancer, except possibly when there is jaundice. The reaction is always positive with the latter, but it disappears with the cholemia, while in malignant disease it persists without change. The miostagmin reaction was found constantly negative in conditions difficult to differentiate from cancer, such as benign tumors, gastric ulcer, chronic inflammation of the stomach or bowel, leg ulcer, afebrile surgical tuberculosis, chronic inflammatory conditions in the female genital organs, and syphilis.

61. **False Cysts in Spinal Meninges.**—Bonhoeffer relates the details of two cases of spinal-cord trouble in which the discovery of cysts in the pia and arachnoid apparently explained the disturbances. But the lack of any benefit from their evacuation and other circumstances justify the assumption that the cyst-like protuberances had developed casually in the course of the laminectomy, in consequence of the abnormal pressure in the subdural space, and had not existed before. In any event they had nothing to do with the previous clinical picture. The actual disease of the spinal cord has progressed since, unmodified by the laminectomy and draining of these sham cysts. Necropsy in one case further confirmed these views.

Correspondenz-Blatt für Schweizer Aerste, Basel

September 25, XLV, No. 39, pp. 1217-1248

64 Varieties of the Babinski Toe Reflex and Their Import in Diagnosis. R. Bing.

Deutsche medizinische Wochenschrift, Berlin

September 23, XLI, No. 39, pp. 1145-1176

65 *Action of Morphin on the Diseased Heart. (Die fördernde Wirkung des Morphiums auf die heterotope Reizbildung im Herzen.) H. E. Hering.
66 Bacteriotherapy of Puerperal Infections. III. R. Kraus and S. Mazza.
67 Technic for Bacteriologic Diagnosis of Typhoid. (Die Verwertbarkeit der "Schrägagarröhrchen-Typhus-Diagnose.") K. Halbey.
68 Collective Inquiry on the Question of Sexual Abstinence. A. Neisser.
69 Specificity of the Abderhalden Reaction. E. Herzfeld.
70 Radiotherapy of Lupus and Other Tuberculous Disease of the Skin. (Höhensonnenbehandlung tuberkulöser Erkrankungen der Haut.) G. A. Rost.
71 *"Scrofula." (Wesen und Behandlung der Skrofulose.) H. Schelble.
72 Localization of Foreign Bodies. (Einfacher Apparat zur Ortsbestimmung von Fremdkörpern.) H. Günther and G. Vogel.
73 *Improved Technic for Hospital Construction and Ventilation. (Einige Ratschläge für den Bau von Krankenhäusern.) W. Block.

65. **Action of Morphin on the Heart.**—Hering discusses the experimentally demonstrated fact that morphin in large doses, by increasing vagus tonicity, may indirectly induce a heterotopic impulse for the heart action, that is, induce ventricle automatism. The effect of the morphin varies as the heart is sound or diseased, the pathologic heart responding more readily. Hence extra caution is necessary when giving morphin in cases with a tendency to abnormally located impulse production. The sudden onset of fibrillation is a reasonable explanation in many cases of an immediately fatal attack of angina pectoris, and morphin, by promoting the tendency to fibrillation, that is, to heterotopic impulse production, may prove a factor in the fatal outcome. At the same time, he warns that the valuable aid from morphin in angina pectoris should not be discarded, but only that the dosage should be supervised with special care. He remarks parenthetically that the action of drugs on animals has been studied too exclusively on healthy animals. Diseased organs respond more readily to smaller doses.

71. **"Scrofula."**—Schelble discusses the old conception of scrofula, showing that when one has eliminated from it tuberculous affections of the skin, soft parts, bones and lymph glands, there is nothing left of the "scrofula" syndrome but the facies scrophulosa. This, he asserts, belongs to the exudative diathesis, and it is still a question whether tuberculosis is involved in this or not. Clinical experience seems against it. The cases should be designated as the exudative diathesis in connection with measles, with vaccination, with catarrhal infection, or the like. This affords insight into the individual cases and promotes causal treatment. The fine results obtained by treatment of the exudative diathesis and the provocative factors, ignoring the hypothetic tuberculosis, testify to the correctness of the above assumption, especially in cases of conjunctivitis with phlyctenas. All observers agree that signs of the exudative diathesis are manifest in all cases of phlyctenous conjunctivitis, and that the exudative diathesis is always in a severe form. It is hard to explain, however, why the phlyctenas develop so late, later than the other manifestations of the exudative diathesis, sometimes not until long after puberty. In these cases tuberculosis may be the provocative factor. It would be interesting to learn whether the phlyctenas are more rebellious to treatment in the cases with a positive response to tuberculin than without. The treatment is discussed in detail and the point emphasized that when the exudative diathesis

is known to exist, every aggravation of the condition should be early recognized and appropriate measures enforced. By the exudative diathesis he means Czerny's original clinical picture, confirmed in thousands of cases, the congenital anomaly consisting in a tendency to exudation in the skin and mucosa, plus hyperplasia of the lymphoid organs, without tuberculosis as a primary factor. He warns against attempts to remove the enlarged glands in the neck even when they are known to be tuberculous. They are frequently secondary to pathologic changes in the mouth or tonsils and retrogress under appropriate treatment of the latter. If the lymphoma has softened it will heal under a mere incision. Only when the suppuration involves adjacent tissues is more of an operation required. Many of the leading surgeons now denounce all attempts at operative removal of enlarged glands in the neck and commend conservative measures, including radiotherapy. Rollier's fine results with heliotherapy conservative treatment bring to mind the tragic histories of recurrence after extensive operative procedures.

73. **Construction of Hospitals.**—Block gives a number of practical suggestions which were carried out in the construction of a large hospital at Hannover and have proved their usefulness during the year since the hospital has been in service. The floors are made of asphalt and covered with cork linoleum. Various advantages are claimed for this combination, including superior elasticity, waterproof properties and that the linoleum can be laid twenty-four hours after the asphalt has been applied. Sheets of cork on both sides of the wall effectually deaden the sounds between adjoining rooms. The ventilation contrivance found practical and serviceable is to have double windows, each with a cover opening inward. The cold air entering low down in the outer window is warmed by a radiator below and rises to emerge through the broad opening high up in the inner window. The radiators should not be too far apart, and their surface should be smooth to facilitate keeping them clean. For the same reason they should stand a few inches from the wall. Soiled clothes shafts disseminate odors, and it is much better, he insists, to collect the linen in airtight metal cans.

Medizinische Klinik, Berlin

September 19, XI, No. 38, pp. 1039-1064

74 *Experiences with Typhoid Among the Troops. (Erfahrungen und Gedanken über Typhus und Typhusbehandlung im Felde.) A. v. Hecker and C. Hirsch.
75 Gas Phlegmons in the Wounded. P. Sackur. Commenced in No. 37.
76 Relapsing Fever. (Rückfallfieber.) L. v. Korczynski. Concluded in No. 39.
77 Paralysis of Abdominal Muscles with Acute Anterior Poliomyelitis. (Zur Frage der Bauchmuskellähmungen bei Heine-Medinscher Krankheit.) K. Halbey.
78 *Serotherapy in Epidemic Cerebrospinal Meningitis. M. Kurak.

74. **Typhoid Among the Troops.**—In the typhoid service in charge of Hirsch and Hecker the mortality was only 5.4 per cent. excluding the cases suffering from long transportation, and 7.4 per cent. including all the cases. Saline infusion rendered valuable service; also systematic ingestion of salt. Some of the more seriously sick, with recurring collapse, were given 200 or 300 injections (camphor, caffein, digitalis) and finally recovered, without displaying any signs of drug intoxication. The main point is ample nourishment plus careful supervision of the heart and vasomotors. The severer cases were in men who had been inoculated against typhoid while they were in the incubation stage. The course of the disease was milder, the longer the interval since the last inoculation. Another rule which seemed to prevail also was that relapses were more numerous the milder the primary disease. The fever curve in the inoculated seems to lose its characteristic features.

78. **Serotherapy of Meningitis.**—Kurak reports from Vienna that in seventy-five cases of epidemic meningitis in the last thirteen years, forty-three were treated by serotherapy and the proportion recovering jumped from 31 to 56 per cent.; all but 39 per cent., however, were left with some permanent defect. The dosage of the antiserum had been small, the maximum 60 c.c. In the last series of twenty cases the doses were materially increased. These cases are described in detail to emphasize the far better results obtained when the serotherapy is begun early and when three or four injections of 80 c.c. each are made (40 c.c. intralumbar and 40 c.c. intramuscular) on successive days. All recovered of the six given from 160 to 300 c.c., although one was left with deafness. In the total twenty cases, there were six deaths (33.3 per cent.).

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin

October, XLII, No. 4, pp. 287-388

79 Technic for Obstetric Internal Examination; One or Two Fingers? (Zur Frage der inneren Untersuchung mit einem oder zwei Fingern.) B. S. Schultze.
80 *Roentgen Measurement of the Pelvis. (Zur röntgenologischen Beckenmessung.) E. Runge and E. Gruenhagen.
81 *Dystocia from Deformity of the Uterus. (Geburtsstörungen durch Entwicklungsfehler der Gebärmutter.) T. H. Van de Velde.
82 *Loosening Up and Rupture of the Symphysis. E. Kehrer.
83 Management of Laceration of the Cervix During Delivery. (Intermediäre Trachelorrhaphie als Prophylaktikum gegen die mitunter auftretenden unangenehmen Erlebnisse infolge von Cervixrissen.) H. J. Boldt (New York).

80. **Roentgen Estimation of Measurements of Pelvis.**—Runge and Gruenhagen think they have solved the problem of measuring the diameters of the pelvis by a stereoscopic Roentgen technic which they describe in detail. The patient lies comfortably flat on her back. The tube is slightly displaced for the second, the stereoscopic, picture, but the impression from both negatives is taken on a single sheet of paper, and the measurements are calculated by an algebraic or geometric formula. They give a table with the measurements computed for the different figures usually obtained, and state that the method ensures absolute accuracy, or at most an error of a small fraction of a millimeter. They have had no opportunity to test the method on women since they have completed their computations, but have found it absolutely correct on men; some of them were examined postmortem and the figures obtained were identical with the computed findings or varied only from four to six tenths of a millimeter.

81. **Abnormal Childbirth from Defective Development of the Uterus.**—Van de Velde discusses the various forms of double uterus in their bearing on delivery at term, and also dystocia from defective development of the uterus, or from congenital deformity of the cervix. The uterine musculature is liable to be weak, the cervix rigid and the axis of the fetus and uterus slant in respect to the pelvic inlet. This combination readily explains the rupture of the uterus in certain rare cases. The diagnosis in these abnormal conditions is misleading; in Tissier's case external version had been done and the placenta separated by hand without suspicion that the uterus was double, until this was revealed by the laparotomy. In a personal case described the fetus had developed to term in a double uterus which had no opening into the vagina in the gravid half. The finger could be introduced into the empty other half and the child was safely delivered by vaginal cesarean section. The woman passed through several pregnancies later, twice in the other half and once in this, but none developed to term. Tuberculous peritonitis followed in later life and compelled laparotomy before recovery, and the anatomic conditions were minutely inspected. The few somewhat similar cases on record are compared with this case, but no answer is suggested for the question why this half of the uterus with atresia permitted conception although it had never apparently participated in menstruation. After the artificial opening had been made, menstrual hemorrhages issued from it as regularly and normally as from the normal half.

82. **Rupture of the Symphysis.**—Kehrer has compiled quite an extensive literature on rupture of the symphysis during delivery, and gives the details of 100 cases. He adds to the series a case personally observed. The patient was a previously healthy tertipara with contracted pelvis. Her children had all been stillborn and the high forceps had been applied repeatedly at this time, with external impression of the head into the pelvis, the woman in Walcher's position. On failure of the high forceps again, perforation and cranioclast extraction at once had been planned, but the symphysis ruptured

during the high forceps. The urethra was torn loose and slit almost its entire length, and the neighboring ligaments were also torn. The sound of the tearing was audible and unmistakable, and a gap over an inch wide could be felt in the symphysis. The head came through at once, and the bleeding in the region of the rupture was arrested by tamponing. The patient died sixteen days later from embolism in the pulmonary artery. In conclusion Kehrer summarizes fourteen cases of traumatic rupture of the symphysis, all but one in men.

Three degrees of rupture of the symphysis have been observed; partial rupture of the ligaments, occurring during delivery and, exceptionally, during pregnancy; complete rupture occurring acutely during delivery or supplementing a previous partial rupture. The third type of rupture is that from overstretching and loosening up of the symphysis ligaments, with or without gaps in the cartilage. The result is a kind of flail joint, developing during a pregnancy or returning in successive pregnancies. A distinct noise is usually heard, and the woman feels as if something had torn. The sound is made mostly by air rushing in as the vagina is torn. When this does not occur and the symphysis ruptures while the woman is under the influence of an anesthetic, the cause for the pains and tenderness in the region may not be suspected for days. The sudden dropping down of the fetus' head is characteristic, and the skin over the symphysis can be pressed down in the form of a long groove. The gap is most evident, however, on palpation through the vagina. After rupture of the symphysis the legs turn outward, so that the knees and feet lie on their outer side. Tearing of the urethra and bladder complicate the rupture at times beyond repair. Gangrene of the foot was observed in one case; fatal embolism in two, and in a few cases bone or cartilage sequesters were expelled months afterward. The ultimate outcome is about the same as after subcutaneous symphysiotomy.

The obstetrician cannot be held responsible for the rupture unless possibly in most exceptional cases of application of extreme force, and then only presumptively, as the records show that such ruptures have occurred with spontaneous births, also spontaneously during pregnancy and delivery, and during delivery under the hands of the most experienced obstetricians. Even when the physician fails to recognize the rupture, and fever and other symptoms develop, these may be masked by puerperal fever or parametritic exudates. A partial rupture during delivery may become complete days or weeks later. It is not always easy to determine whether suppuration at the symphysis is the result of rupture during labor or a puerperal metastatic process. The patient must be kept absolutely still on her back; if the gap is not large it may grow up in two weeks. At future deliveries, conditions favoring rupture must be avoided. The pelvis must be held up with a supporting band and spreading of the knees avoided.

Münchener medizinische Wochenschrift, Munich

September 21, LXII, No. 38, pp. 1277-1308

84 Agglutination in Diagnosis of Typhoid in the Inoculated. (Wert der Agglutinationsprobe bei Typhusgeimpften.) E. Reiss.
85 Open Puncture of the Pleura. A. Schmidt.
86 Gunshot and Shell Wounds of the Joints, and Treatment. (Gelenkverletzungen, Gelenkeiterungen und ihre Behandlung.) E. Payr. Concluded in No. 39.
87 Antitoxin Found in Serum during and soon after Tetanus. C. T. Noeggerath and E. Schottelius.
88 Harmlessness of Antityphoid Vaccination. (Unschädlichkeit der Typhusschutzimpfungen.) E. Laqueur.
89 *Futility of Disinfecting Field of Operation as a Rule. (Wert der Desinfektion des Operationsfeldes.) M. zur Verth.
90 *Open Treatment of Gunshot and Shell Wounds. (Offene Wundversorgung.) Härtel.
91 Anamnesis of So-Called War Psychoneuroses. R. Laudenheimer.
92 Medicomechanical Appliances to Use in Bed. Fuchs.
93 Roentgenoscopy of Gas Phlegmons. B. Döhner.
94 Partial Amputation of Foot According to Sharp. A. Harf.
95 Amputation Technic. Merkle.
96 Handkerchiefs as Sources of Infection of Others. (Zur Verbeugung der epidemischen Genickstarre.) J. Petruschky.

89. **Disinfection of Field of Operation.**—Zur Verth declares that before disinfection can be done there must be infection and it is by no means certain that the skin of the field of operation is already infected. As a rule this is not the case, and hence measures to disinfect are superfluous and do merely harm. It is better, he insists, to omit this alleged disinfection of sound skin until we have some method for disinfection which is actually harmless. Wounds with much destruction of tissue require mechanical disinfection. The iodin technic represents progress as it simplified and crowded out more harmful measures. But the experience in this war has shown that the iodin is far from harmless. He adds that, while denouncing our present methods of chemical disinfection, he still emphasizes the dire importance of contact infection.

90. **Open Treatment of Wounds.**—Härtel is enthusiastic over the advantages of leaving wounds open to the air, merely covering them with a single layer of gauze to keep flies away and veil the lesion. The gauze is held up by a light wire support, the "wire butterfly," and the patients are grateful that they are spared the painful changes of dressings, while the physician appreciates it as he can thus keep the lesion under his eye all the time. There is no odor from the lesion. It is indispensable, however, that the limb should be immobilized. This leaves the organism free to devote all its energies to repair, and it does this without requiring the aid of chemicals.

Zentralblatt für Chirurgie, Leipzig

September 25, XLII, No. 39, pp. 705-720

97 Walking Prothesis after Amputation. O. Orth.

October 2, No. 40, pp. 721-736

98 Temporary Gastrostomy for Draining the Stomach in Ileus. (Ueber Magendrainage durch Gastrostomie.) G. Nyström (Stockholm).

Zentralblatt für Gynäkologie, Leipzig

September 25, XXXIX, No. 39, pp. 683-698

99 External Version with Placenta Previa. (Einiges zur Kritik der von Zalewski empfohlenen Steisstherapie der Placenta praevia.) W. Hannes.

October 2, No. 40, pp. 699-714

100 Mechanism for Inhibition in Urogenital Apparatus. W. Benthin.

Brazil-Medico, Rio de Janeiro

September 15, XXIX, No. 35, pp. 273-280

101 Leprosy in Form of Syringomyelia. J. Candido.

Hospitalstidende, Copenhagen

September 22, LVIII, No. 38, pp. 949-980

102 Tetanus in Boy of 4; Recovery under Serotherapy and Magnesium Sulphate. J. Nordentoft.

September 29, No. 39, pp. 991-1014

103 *Differential Diagnosis of Leukemic and Leukemoid Blood Pictures; Four Cases. H. Buhl. Commenced in No. 38.

103. **Differential Diagnosis of Leukemic Blood Picture.**—Buhl gives the minute details of four acute cases suggesting a generalized disease of the blood-producing apparatus. He compares them with the classic types, and discusses the views of various clinicians on the leukemic and leukemoid blood pictures. The article is illustrated. In each of his four cases the blood picture was that of one-sided neutrophil leukemia, but the numbers of leukocytes never reached the typical leukemic figure. The cases, thus, were of the transitional type between simple neutrophil leukocytosis and true leukemia. The patients were young men of 19 and 21 and two women of 24 and 25. The necropsy findings in two of the cases are also given. Death occurred after the first symptoms in nineteen days in one case, but the intervals were longer in the others. Radiotherapy seems to be contraindicated in primary "neutroleukemia," as a change in the blood picture to this type in true leukemia under benzol, radium or Roentgen treatment is generally regarded as a signal warning to suspend these vigorous measures. Benzol was tried in two of the cases here reported, but the results discourage further attempts in this line. In any event, one is on the safe side in taking the behavior of the eosinophils as a guide in treatment, in connection with large numbers of leukocytes. Subleukemic leukocyte figures may occur likewise with complications (sepsis), during remissions of leukemia, and under the influence of treatment.

Hygiea, Stockholm

LXXVII, No. 17, pp. 961-1024

104 Some Attempts to Produce Exophthalmos Experimentally. (Några försök att på experimentell väg framkalla exoftalmus.) A. Troell.
105 Pneumothorax after Exploratory Puncture in Typhoid. I. Holmgren and S. Orell.
106 Local Abscess Five Months After Injection of Friedmann's Anti-Tuberculosis Vaccine. K. Frumerie.

Norsk Magazin for Lægevidenskaben, Christiania

October, LXXVI, No. 10, pp. 1177-1304

107 *Research on Heredity in Norway. (Arvelighetsundersøkelser i Norge.) K. Bonnevie.
108 Syphilis Contracted Anew for the Third Time. R. Krefting.
109 The New Ophthalmologic Clinic at Christiania. (Rikshospitalets øienklinik.) H. Schiøtz.

107. **Research on Heredity.**—Bonnevie devotes nearly fifty pages to a study of various families in Norway showing inheritance of anomalies such as polydactylism, harelip, hemophilia, twin births or dwarf growth. His work to date is fragmentary, he admits, and is mainly to stimulate interest in the subject. He says that conditions in the families of Norway permit such research through several generations better than is possible elsewhere. The large families and the stable residence in remote hamlets facilitate the tracing of Mendel's laws of heredity. He urges that research of this kind should be planned to be carried on through future generations. Material should be accumulated now to serve as the bases for research workers ten or twenty years from now, and still later. The family trees he here presents will be far more significant when carried on further after an interval of twenty years. Cooperation between physicians and biologists is necessary for this, and the work must be organized and correlated. He suggests a central headquarters for the purpose, a heredity institute, to which single reports from different districts can be made, and where the data can be classified and correlated. He adds that Lundborg has already done considerable work in this line in Sweden, studying the hereditary development of myoclonus-epilepsy in certain rural families. His charts, published in 1913, embrace 2,232 persons in the Blekinge province; the myoclonus-epilepsy is shown to be recessive.

Ugeskrift for Læger, Copenhagen

September 16, LXXVII, No. 39, pp. 1545-1570

110 *Practical Suggestions for Sanatorium Treatment. N. J. Strandgaard.
111 *A Portable "Dark Room." (Et transportabelt Mørkekammer.) K. K. K. Lundsgaard.

110. **Practical Points in Sanatorium Treatment.**—Strandgaard draws some practical conclusions from his experience at the Boserup sanatorium in Denmark. He reiterates that a sanatorium is a combination of a hospital and a rural health resort, and would still maintain its usefulness even if a specific cure for tuberculosis should be discovered. Nowhere else could it be applied to such effect. He makes no attempt at overfeeding, merely striving to bring the patient's weight up to the standard of the life insurance tables. It generally soon reaches this spontaneously, and keeps there. He says that percussion and auscultation do not require complicated instruments or methods; the simplest are the most instructive. The main thing is to examine exactly symmetrical points, the patient sitting on a high stool without a back, and told to cough lightly as each point is auscultated. The stethoscope should be applied systematically at successive points; he enumerates a series of six regions in front, nine at the back and three at the side to be ausculted in turn. For recording the findings he lauds Bang's system of signs; the principles can be learned in five minutes, and several years' experience has confirmed the practicability and great value of the method. It saves fully an hour's work each day in the sanatorium. In comparison with Sahli's and other systems of signs, he has found the Bang method much more of a time-saver.

The prognosis of tuberculosis depends, he declares, on the benign or virulent character of the infection even more than on the stage it has reached. The patient's carelessness, abuse of alcohol, or similar accidental factors explain the recurrence in many cases. One young man, dismissed as clinically cured, had recurrence of trouble after a serious bicycle accident. In several other cases the family did not appreciate the necessity for sparing the recently "cured" patients and set them to hard physical labor which soon brought recurrence, as also return to unhygienic occupations or home privations. These points are familiar to all, but can never be reiterated too often, as also the pernicious influence of worry and care. A fracture heals whether one is happy or sad, but psychic factors may turn the scale with a tuberculous process in the lung. In some cases related the patients' homesickness counteracted the benefits of sanatorium treatment; in others, under grief at the death of some member of the family, or fear of scandal, the lung process flared up anew. In another case a young man worried over his wife's approaching confinement and long failed to benefit from the sanatorium treatment. His condition began to improve as if by magic after the baby came. Emotional factors are particularly potent for good or ill in women, both young and old.

111. **Portable Dark Chamber.**—Lundsgaard has found very useful for ophthalmoscopy in the sickroom and elsewhere a dark chamber contrived from an umbrella made with a deep curtain all around. An illustration is given of the one he uses.

Upsala Läkareförenings Förhandlingar

May 31, XX, No. 5, pp. 271-330

112 The Blood Pressure in Cats after Nephrectomy and Excision of Part of Remaining Kidney. (Blodtrycket förhållande efter njurexstirpation och njurresektion.) E. L. Backman.
113 Oxygen Tension in Body Fluids of Sea Anemone. (Om syrgasens tension i kroppsvätskan hos Coelenterater i fritt tillstånd i hafvet och efter vistelse i akvarium.) E. L. Backman.
114 Principles for Correction of Astigmatism. J. W. Nordenson.

September 8, No. 6-7, pp. 331-385

115 *Comparison between the Sugar Content of the Blood under Oral and Rectal Intake of Dextrose. (En jämförelse mellan blodsockerhalten vid oral och rektal tillförsel af dextros.) G. Jahnson-Blohm.
116 *Importance of Exposure to Tuberculosis during Childhood. 'Till frågan om betydelsen af den tuberkulösa expositionen under barnaåldern.) A. Wallgren.
117 Technic for Bloodless Determination of the Blood Pressure in Animals. (Till tekniken vid oblodig blodtrycksmätning på djur.) E. L. Backman.
118 Shape of the Lower Jaw in Man. (Bidrag till kännedomen om underkakens typologi hos människan.) G. Backman.

Supplementary Number

119 Food of the Populace in Germany during the War. (Om folknäringsfrågan i Tyskland under kriget.) O. Hammarsten.

115. **The Sugar Content of the Blood after Oral and after Rectal Intake of Dextrose.**—Blohm's tests were made on three healthy men of 24 and two diabetic men of 44 and 73. They took 10 gm. of dextrose by the mouth, or were given 30 gm. by rectal injection, all in an isotonic solution. These amounts were given at a single dose or fractioned. The sugar content of the blood rose at once after ingestion of the dextrose by the mouth, both in the diabetics and in the healthy, but no increase was perceptible in either after the rectal injection of the sugar. There seems to be thus some marked difference in the behavior of sugar in the body according as it is absorbed by the upper or lower bowel. The fact of the absorption by the rectum was established beyond question, but the cause of its different behavior after absorption at this point is still a mystery.

116. **Exposure to Tuberculosis as a Factor in Tuberculosis Later.**—Wallgren found a history of tuberculosis in the family before the age of 15 in 51 per cent. of 100 tuberculous persons, and in 13 per cent. of 100 healthy, all under the age of 40. A history of exposure to tuberculosis before the child was 5 years old was ascertained in 15 per cent. of the tuberculous and in only 1 per cent. of the healthy. Among the 100 tuberculous one or both parents had been tuberculous in 27 per cent.; a brother or sister in 6 per cent., and other relatives in 11 per cent. Among the 100 healthy persons only 2 per cent. had a history of a tuberculous parent; 2 per cent. had a tuberculous brother or sister, and 3 per cent. other relatives. The sexes were represented about equally in both series.